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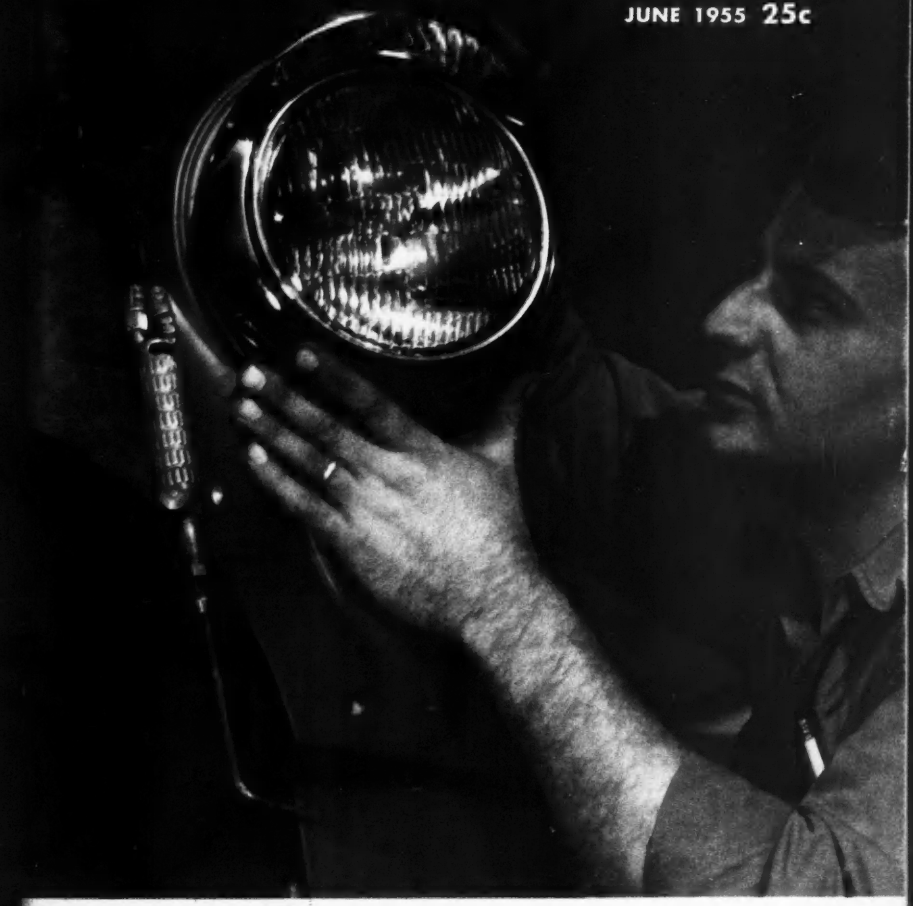

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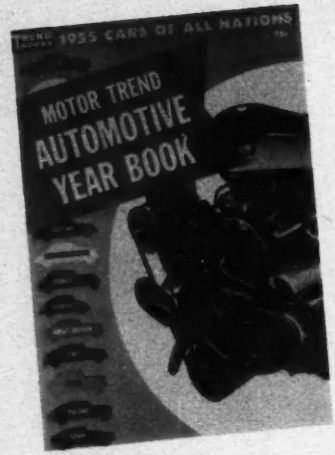

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Vol. 3 — Published Monthly — No. 2

The Show-How Magazine

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COVER

While shooting up how to install the popular and versatile '55 Chevrolet headlight rim last month at the Barris Brothers' Custom Shop, Bob D'Olivo, our ace shutterbug, caught John Manok in the act of fitting up the new shaded type rim. The story starts in complete step-by-step photo fashion on page 48. Ektachrome by Bob D'Olivo

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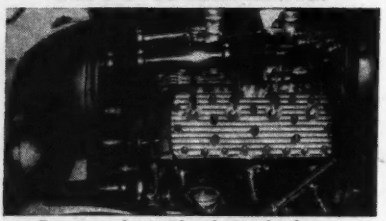

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BENCH RACIN'

with Racer Brown

BY FAR the biggest headache, when dealing with modified or even stock engines, comes in trying to get the thing to operate properly under all kinds of conditions. This "tuning stage" can be time consuming, very exasperating and, worse yet, downright destructive to the engine unless the necessary operations are performed with discretion, tolerance and intelligence.

Unfortunately, there can be no generalized hard and fast rules laid down for tuning all engines to the peak of power and efficiency. The basic rules for engine tuning are no doubt a great help to the uninitiated amateur, but to get to the finer points, each engine must be treated as an individual case; its characteristics must be made to match the requirements of the driver and it's a certainty that no two drivers are identical. All this boils down to two facts: First, it takes quite a bit of "monkey-motion" to make any given engine perform to the wishes of its master regarding power output or fuel economy. Second, there is *always* at least one compromise that must be made to obtain the desired results. In other words, if one wants maximum power at all engine speeds, some sacrifice must be made in fuel economy or vice versa. Also, if maximum acceleration is required, the potential top speed cannot be obtained, but this is not always a function of engine tuning because final drive gear ratios are involved as well.

There are three necessary steps in tuning an engine that should be followed in their proper sequence. First, the fuel/air mixture ratio must be checked. Here, an exhaust gas analyzer is an invaluable tool and a portable analyzer, such as one model made by Allen, is advisable so that the mixture can be observed in actual operation on the road. If one is tuning for maximum economy, the best practice is to drive on a level stretch of road at the speeds most frequently encountered, avoiding rapid acceleration and near top speed so that the mixture variations caused by the carburetor accelerating pump and power circuits will be kept from interfering with the analyzer indications. It is not advisable to lean the mixture by more than 3 or 4 per cent

(Continued on page 63)

Words From The Editor

EVERY month we receive letters from avid hot rod and custom car readers that sound something like this: *Dear Sir: I buy your magazine every month and enjoy the articles very much, but—how come you never feature hot rods or custom cars from back here in the Middle West or East? signed: Herman, East Overshoes, Ohio.* To us, Herman has a very legal gripe, and one that we here at CAR CRAFT are, quite possibly, more aware of than you—*the reader.*

We realize that this unfortunate situation prevails, and to relieve some of its sting, our staff members do their utmost to procure photographs and stories of out-of-state cars when attending large events such as Bonneville National Speed Trials, championship drags and big time auto shows. This is where our personal efforts away from home base cease. From here on in we have to depend on what our outlying contacts or free lance correspondents submit from their particular locales; this we accept with open arms.

Not very long ago we assigned Jack Baldwin, one of our capable aforementioned correspondents, to do a simple, down to earth article on how to photograph a car for commercial use or as a hobby. After Jack completed the story it went to Bob D'Olivo, head of Trend's photography lab, who added a few more secrets of the trade to the text along with some time saving short cuts.

This represents our combined efforts in passing on to you the proper method and vital information on how to photograph your own car and submit it to the magazine. We hope that this has set the stage—the story begins on page 24.

Next month for all you micro midget fans, we will have on hand some fine construction tips. We are using two approaches: the first, a micro that was built strictly beside the garage laundry tub, which is sometimes referred to as the "Plumbing Pipe Special." The second car is Johnny Hysinger's full torsion bar job that represents about one thousand dollars in cold cash. Using both cars as a construction example—we feel that the average enthusiast could bolt together a car that would be as good as his fellow competitor's equipment and could just about dust the pants off of the best of 'em.

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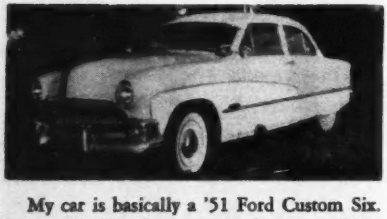
LETTERS

A LEGAL GRIPE

Dear Sirs:

I am a great admirer of your fine magazine, as are many of my friends. We have one big beef, however, and we think that we are justified. It seems that all we ever see in your book are pictures of custom cars from the West coast. While my car is not much, we would like to see it in your magazine. It is a small example of what we are doing here in the "other part of the country." However, I have to admit that the work was done by a former Californian. Lou Smolak, to be exact. He now has a small shop in Delaware Water Gap, Penna., where he is doing quite well.



My car is basically a '51 Ford Custom Six. The grille has been replaced with a Merc grille, the headlights frenched, the deck and nose shaved. The original taillights were cut out and the rib was shrunk out of the fender, '54 Ford taillights were leaded into the fenders. I installed '54 back-up lights to match the taillights. A '50 Chev license plate frame was ground out to fit the stock Ford rear bumper. The finish is Alpine White and Iris, '54 Cadillac colors. Engine is stock except for a milled head and a ¾ cam. Future plans might include a Caddy mill.

Would like to see my machine in your magazine.

Yours truly,
Russ Irwin
Stroudsburg, Penna.

We welcome all out of state car features, but must ask that a thorough technical information sheet listing all modifications and work done on the car accompany the required 8x10 glossy, black and white photographs. So let's hear from yuh, gang.—Ed.

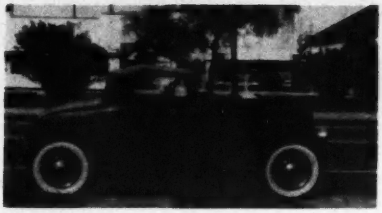
HOORAY FOR THE "GALVESTON VAGABONDS"

Dear Sirs:

I have been a reader of your fine magazine since it came out formally as "HONK!" You sure have a fine little mag, it's packed full of things to help guys like me get started. Ever since I started reading your magazine I wanted a rod of my own so I finally got it (enclosed). It's a '30 Model A roadster; mill is almost stock but in the near future I hope it will be better. I plan on dropping a '48 mill in it; as for now it is a '40 with a few goodies added. It has been chopped and channeled, has a model A rear end, '39 hydraulic brakes,

hand made dash, '46 taillights and a few other things.

Incidentally, those California boys don't have too much on us—we have a club of



about 25 active members, all owning either a hot rod or a custom job, "Galveston Vagabonds."

Thanks,
Marlis Bynum
Galveston, Texas

AH!—THOSE SHARP CANADIANS

Dear Sirs:

In your magazines we do not see very many letters from Canadians. Why?

My husband and I enjoy your CAR CRAFT magazine especially pictures of customs. We are the proud owners of a '40 Ford sedan delivery with a '48 Merc mill, duals, skirts, chrome dash, black and salmon upholstery, stainless steel exhaust tips, etc.

We appreciate anything re: '39-'41 Fords such as body styling.

Now the beef: Cover of January '55—page 32, a '49 or '51 Ford license 2T63853 with a '53 Dodge grille. Then on page 54 the same Ford car, license 2T63853 with a Pontiac grille. How come?

Thanks in advance for your explanation.

Yours truly,
Mrs. D. Bull
Toronto, Ontario, Canada

We've been working on Jay Johnson's car for about 8 months and every time we'd start to do the story on his custom, we'd find out he'd changed something else, so out we'd go and shoot a new set of pictures. The picture on page 32 shows the car as it was many months ago, and the shot of it on page 54 shows it with a new grille. Looks like we've got some pretty sharp readers up in the Mountie country. Stick around, we'll be featuring both hot rod and custom stories on Canadian material.—Ed.

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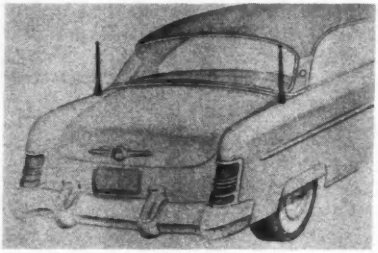

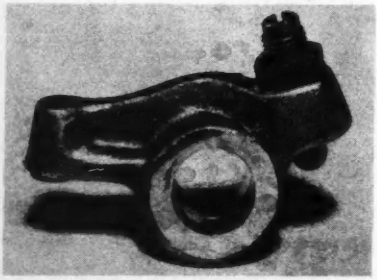

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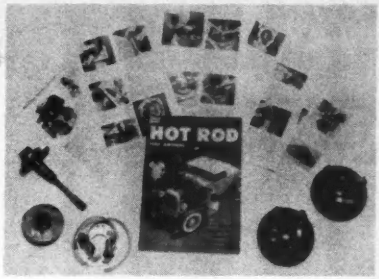

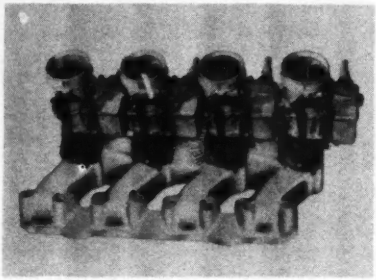

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ADVENT OF MICRO MIDGETS MAKES POSSIBLE FOR TODAY'S WOULD-BE DRIVERS TO...

By Ray Brock

IT SEEMS we really got hold of a hot item a couple of months ago when we did a feature on Micro-Midgets titled "Tempest on a Mud Pie" (February '55). Not only did letters begin to pour into our office, but the secretary of the Florida association mentioned in the article reported receiving hundreds of letters from interested persons wishing information on how to start their own racing associations and how to go about building cars.

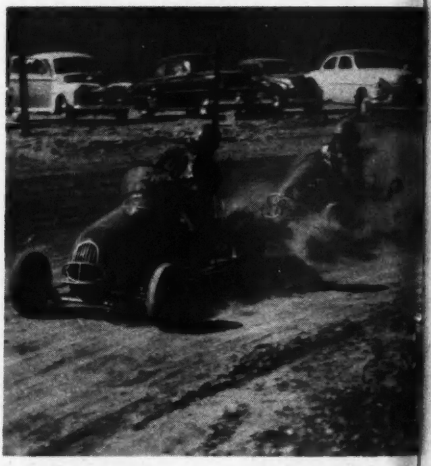
The main part of the queries aimed our direction dealt with car construction, body types, suspension systems, engines, etc. Since the best way to get to the bottom of a subject is to go to the source, we immediately loaded our camera gear into the car and headed for the nearest scene of action, this being Sycamore Park picnic area located off the Santa Ana Canyon Freeway between Corona and Anaheim, California.

Almost every Sunday, weather permitting, the Southern California Micro-Midget Association turns out with as many as twenty-five of these little bombs equipped with just about as many engine makes. The oval shape track that they battle on is 1/10 of a mile at the pole and is graded and kept in condition by the club members. A fence encircles the track for spectators' safety, who, by the way, are admitted free of charge. The track is ideal for the Micros, being that it is approximately forty to fifty feet wide and will accommodate five cars side by side. Of course, sometimes, when this is tried during a race, locked wheels and bent nerfing bars result.

The day's program consists of the usual trophy dash, made up of the four to six fastest qualifiers, heat races, a semi-main and a rugged 20 to 30 lap main event. An-

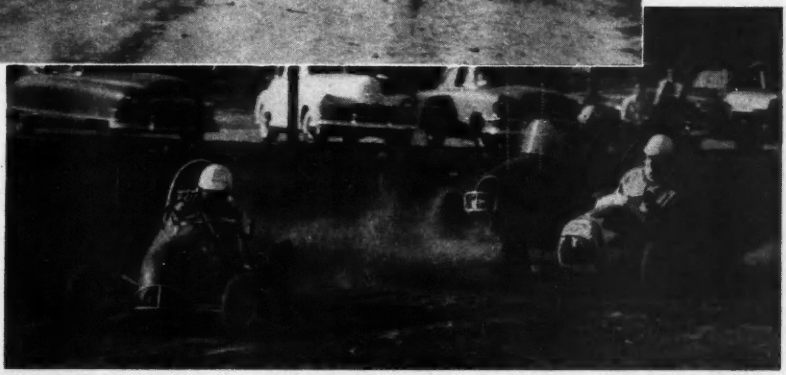
(*Continued on page 12*)

Here's the start of the 30 lap main event. Running-type starts are used for all races. Note that cars don't adhere to any specific body styles, all are true backyard jobs.



Red Longworth literally gets dusted off by a fellow citizen. Low seating position of micro-midget is bad for vision as compared to the higher position of the larger TQ type midgets. When TQ gang say, "here's mud in your eye," they really mean it!

M ON SUNDAY



G. Newton (36), in a nice controlled slide, leads B. Onstenk (4) and J. Hysinger (outside) into the first turn. Onstenk and his Wisconsin powered car is hard combo to beat.

Here is some fine action that micros are capable of turning out. Four cars, side by side, charge for finish line. Track width will handle as many as five cars in this position.

Here, John Hysinger's new full torsion bar job (7) takes corner with prototype micro. As you can see, suspension plays big part.

Who says that micros spread out after race is under way? How's this for close traffic?

Jack Johnson hangs onto rail, but man, what a rail. We all know what this is hard on.

STORM ON SUNDAY

continued

other small event is sandwiched in for added incentive, which is called the helmet dash. This event is made up of what you might call the second level qualifiers, those who were unable to post top qualifying times. They race strictly for points and at the end of the season, top point man takes home a spanking new crash helmet. The drivers race strictly for trophy awards and point standing, no cash is involved. The money is appropriated from club dues and entry fees to race. The Association divides the year into two separate seasons, six

months apiece, and at the end of a season, stages a big blow-off consisting of trophy awarding, election of new officers, and of course, a big chow session.

One unique formality we witnessed during the races and one that might be heeded, is the method in which the infield of the track is cleared of unauthorized personnel. Just before qualifying begins, all persons in the infield are ordered outside the pit gate, this includes officials and all. Once the infield is cleared, drivers and mechanics are allowed to re-enter through the pit gate at which time entry fees are collected and pit passes issued. This method assures only authorized personnel being admitted and saves a heck of a lot of confusion that sometimes prevails on a race track infield.

We have learned from the correspondence that we have received from various micro-midget associations that the rules and building specifications governing the cars vary from one association's thoughts to that laid down by another. In the engine department we find the most diversity. For instance, the biggest percentage use these approximate specifications for maximum engine sizes: 18 cu. in. flathead, 15 cu. in. OHV, 11 cu. in. OHC, 7.5 cu. in. 2-cycle. A few other associations across the country run under these maximum engine specs: 23 cu. in. flathead, 15 cu. in. OHV, 15 cu. in. 2-cycle, 11 cu. in. OHC. The associations that use these higher cubic inch limitations do so for several good reasons. First, more makes of engines can be utilized for powerplants in the small cars. Another sound reason is that flathead engines of 18 to 23 cubic inch capacity have a little more meat on their bones, which stand up under the rugged use more efficiently. Also, we all know that a little more punch and speed was behind their motives. The humorous thing that materialized out of boosting the cubic inch displacement, is that in areas where three-quarter midget racing was quite active, it wasn't long 'til the micro-midget associations had new members beating on the club house door requesting enrollment. The TQ midget gang wanted to join the associations and race under the micro-midget banner. Since a good portion of them were running 45 cubic inch flathead motorcycle engines,

(*Continued on page 64*)

It's an old story about photographers. 'Tis said they are the fastest thing on the track.

Even though there is no nerfing rule, that doesn't stop some of the fast action mishaps.

Al Spinak blew piston in practice. Before car could be towed away, racing buddies had borrowed wheels, upholstery and fuel tank.

Homemade Tubular PUSH RODS

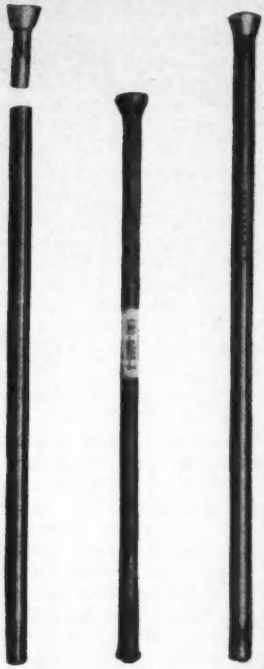
EXTRA STRONG AND LIGHTWEIGHT FOR '55 FORD

By Chuck Eddy

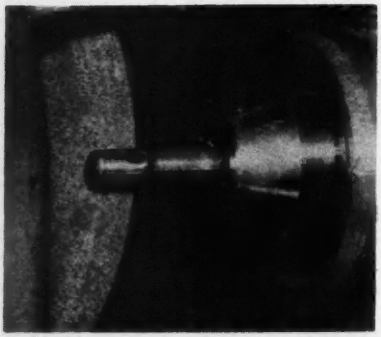
Photos by Joe Moore

AN ADDED refinement to the valve train of any '55 Ford, Merc or T-Bird can be accomplished with the use of a recently introduced stock Ford part. These B4Q6565-A pushrods will cost you about $.40 apiece and are designed to fit, as is, all '52-'55 OHV Ford sixes and the F700-800 and Lincoln engines. However, they are slightly over an inch too long to fit the '54-'55 V-8's. The pictures illustrate the sequence we used to modify the rods to obtain the lighter and more rigid result.

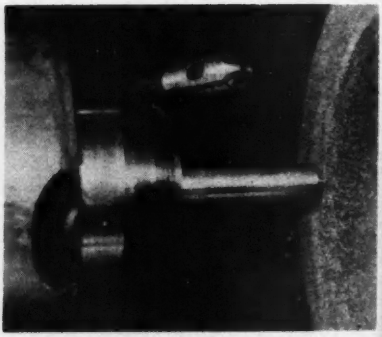
We used a valve grinder to true the ball end and to cut the cup end free. If you are not so particular, a hacksaw may be used to saw the tube and a hand grinder to dress the stem of the cup end. Care was taken to make both the cup and ball ends concentric with the tube, as this contributes to the overall rigidity of the pushrod.



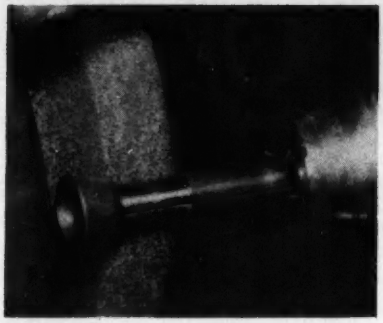
Reworked tubular pushrod at left is ready for assembly, will replace the solid rod from '55 Ford, center. Stock tubular rod shown at the right is used in the OHV Ford 6 and truck V8's.



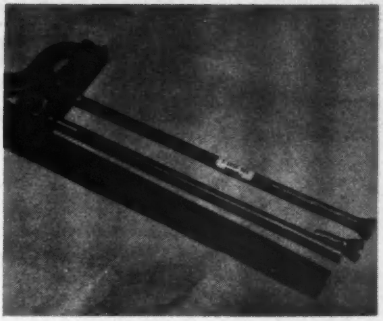
1. Tubular rod is chucked in valve machine, end made concentric with tube by grinding.



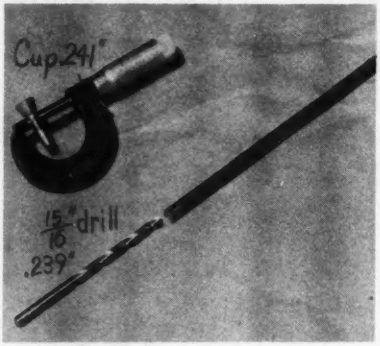
2. With radius dressed into side of stone, ball end is trued slightly to fit tappet seat.



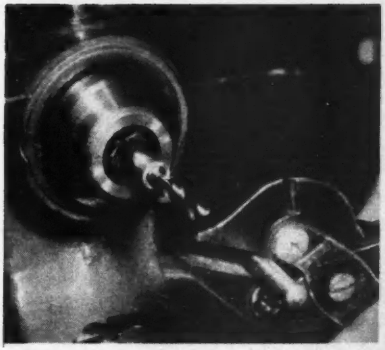
3. Hardened cup insert is ground off at spot weld and then saved for re-installing later.



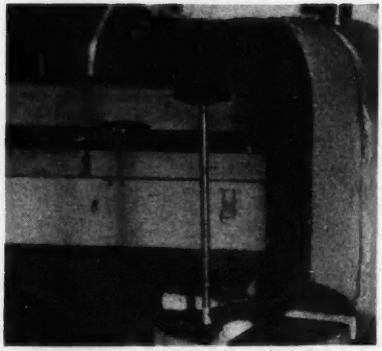
4. Pushrod should be shortened to 8 inches, minus cup, end squared before next step.



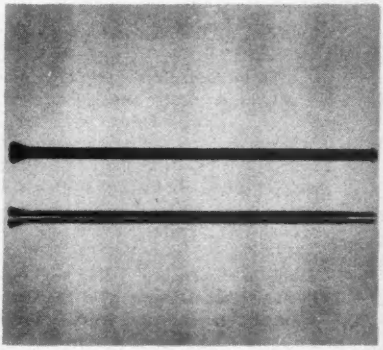
5. Ream out inside of tube with 15/64-inch drill, which allows .002 press fit for cup.



6. If valve machine work head revolves the right way, rods may be reamed as shown.



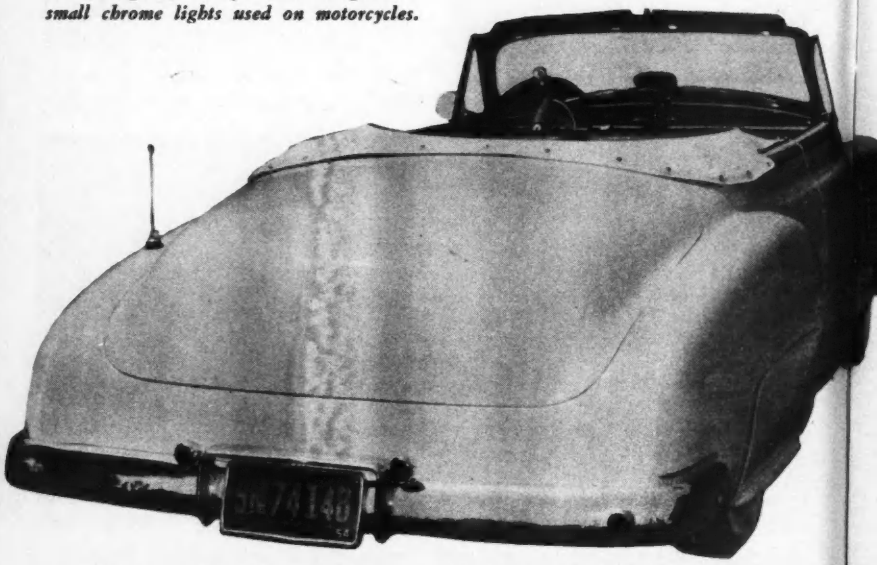
7. Lubricant insert. Press is used for assembly. With caution, soft hammer can be used.



8. New tubular rod weighs 45 grams and is much stronger than heavy stock solid rod.

BEACH TOWN

Bob completely filled in rear body panels of the Chev. The exhaust has been routed out through the bumper and taillights are small chrome lights used on motorcycles.

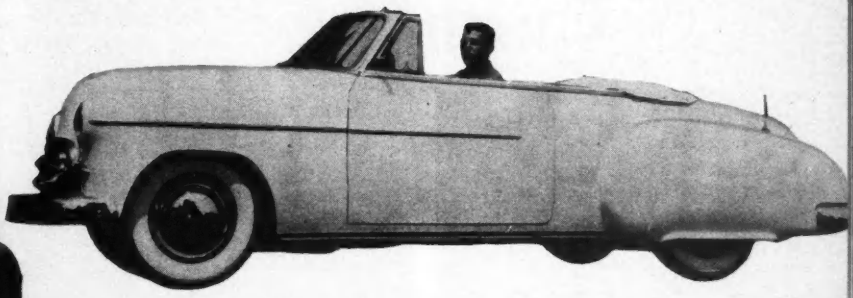


SANTA MONICA, California, is known for three things—its girls, its beaches and its *cars*. For a guy to survive in this beautiful beachtown resort, leading a perfectly normal teenage life, he must possess the key to all three. We say *key* for, in this particular case, key means car. We all know that if you own the right kind of a car, the other two just come naturally.

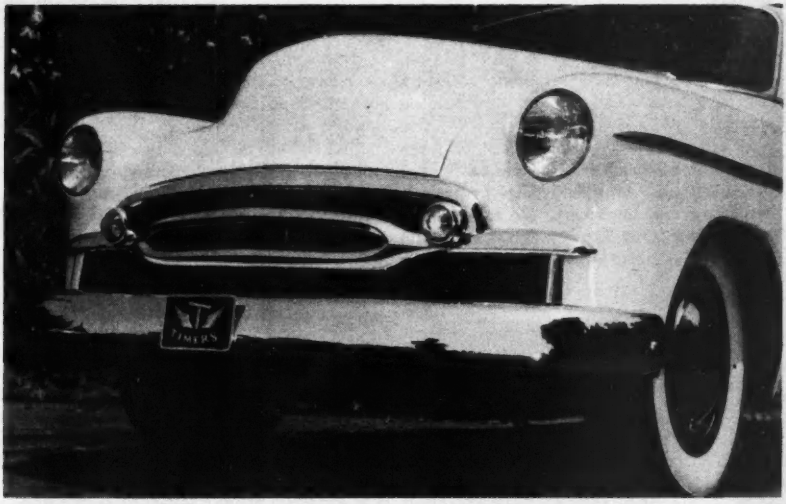
When Bob McGinity, a young resident of this coastal community, came face to face with this problem he sensed that drastic action had to be taken immediately or all would be lost. With just enough scratch in the ol' pocket book, he went out and outfitted himself with a good used '50 Chevrolet—*convertible, of course!* This got him over the first hurdle in fine shape, but now, with his money spent, how was he going to customize the little jewel? Well, if anybody has any doubts as to teenagers coping with their own personal problems, then the rest of this story should serve as a fine example. Bob got real cagy and gave up his summer vacation, going to work for a local custom body shop. Here he worked for three solid months, exchanging his weekly paycheck for custom work on his car. Bob puts it this way, "When you're put in a situation such as I was, it's kind of—to each his own. You know, survival of the fittest!"

BEAUTY

RESULT OF A SHREWD VACATION

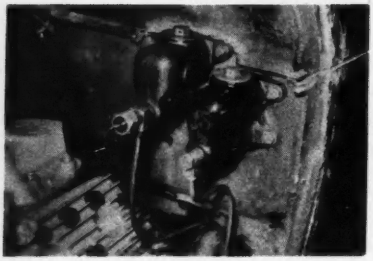


The car was lowered in front by chopping front coils and for the rear Bob utilized 4-inch blocks. A one-piece Olds windshield replaces the stock windshield glass. Door handles have been removed and full '51 Merc skirts are adapted to the rear fenders. Headlights were frenched, using the stock chrome rims. All body seams and gravel pans are filled in.



Bob chose the '54 Pontiac bar route for restyling his Chev grille. Stock center bar and small upright pieces were removed and Pontiac bar cut so as to center in the Chev's grille opening. Pontiac's end bars practically match those of Chevy. After fitting Pontiac bar to the opening, it was then merely spot welded on the inner underneath side. When installing bar, take care, and chances are, rechroming will not be required and welds will not show.

INSTALLING A Hydraulic Clutch



By Ray Brock

AND LATE MODEL Swing Pedals

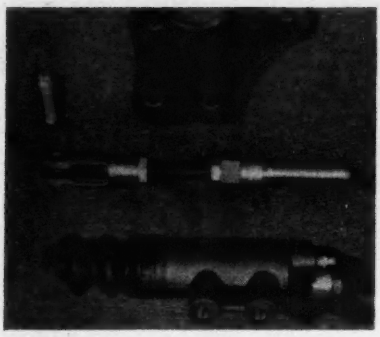
JUDGING from the letters we get from our readers, they are all either building a car, have built a car or have ideas for one sometime in the future. Every one of these cars will naturally present a pack of problems, most of which will have to be worked out by the individual builder to fit his particular piece of machinery. We have a juicy little picture story here though, that should prove useful to more than just a few car builders.

One problem that always seems to arise when a special car is being built is . . . "How am I going to hook up the clutch linkage?" Another series of head scratching starts the day the guy with a homemade sports car is ready to put the clutch and brake pedal assemblies in his pride and joy only to discover that he did such a fine job of keeping things really "down to earth," that he doesn't have room below the floorboards for any type of pedals or linkage. In fact, he's going to have trouble keeping his pants from catching fire due to friction.

Enter our hero: In this particular instance, our hero takes the shape of a pair of swing pedals suspended from beneath the dash and linked to not one but two hydraulic master cylinders on the engine side of the firewall. With the pedal pivot beneath the dash, the guy with the low slung job should be in the clear pedal-wise. Next, the guy who can't find room for mechanical clutch linkage: With a slave cylinder to operate the clutch throwout arm, a hydraulic line is all that is needed between it and that second master cylinder on the firewall.

The step-by-step installation to be seen on the following pages was performed by Tim Timmerman of Tim's Precision Engines, 733 So. Arroyo Parkway, Pasadena 1, Calif. The slave cylinder and bracket are obtainable from Tim, the rest of the parts are late Ford and can be bought from any Ford parts department. Tim did the whole job in less than a day even with us pushing him aside from time to time so that we could take pictures. Give it the old college try.

Photos by Tom Medley

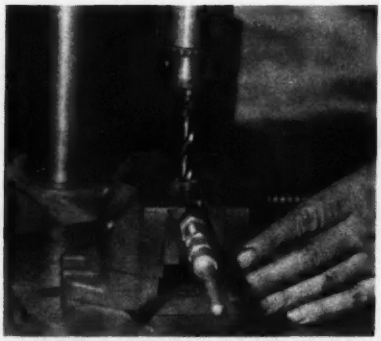


1. Slave cylinder kit includes rod to operate clutch, bracket to hook onto transmission.

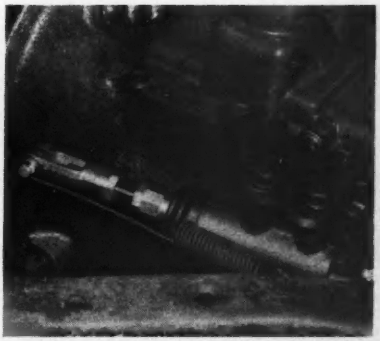
2. Since slave is hooked on trans, flex hose must be used between it and hydraulic line.

3. Slave bracket is fastened in place by two of the bolts that hold the shifter top down.

4. With slave cylinder in place, rod in slave, clevis is repositioned, rod shortened to fit.

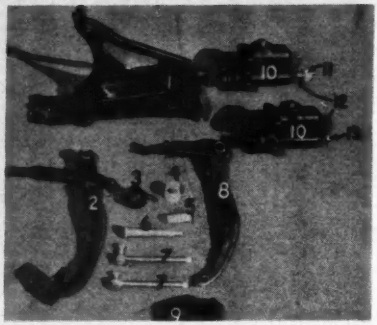


5. Clevis pin hole is enlarged slightly to prevent bind should there be misalignment.



6. Compact slave cylinder setup is complete. Fluid hookup with master cylinder is next.

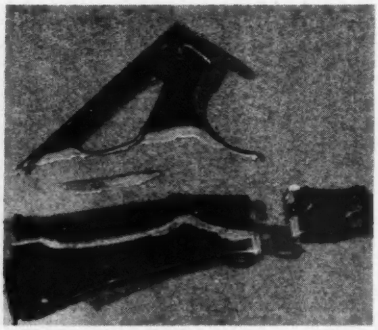
SWING PEDALS continued



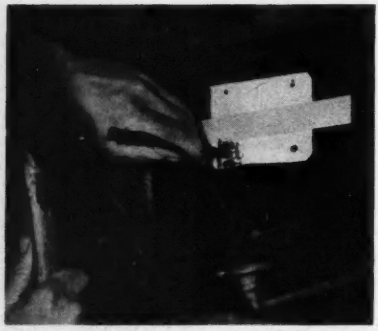
7. Here are the stock '54 Ford parts used for installation. Parts numbers at right.

Part Name	Part Number
1. Pedal Bracket	BR 7001508-B
2. Pedal, Clutch	AB 7519-B
3. Spring, Brake	AB 2472-D
4. Bushing	B2A 2481-B
5. Bushing	AB 2461-B
6. Shaft Assembly	MA 7506-C
7. Push Rod and Eccentric Bolt	AB 2143-C AB 2462-A
8. Pedal, Brake	AB 2455-B
9. Pad, Fordomatic	AB 2454-B
10. Master Cylinder	B2 2140-B
11. Stop Light Switch and Bolt	OA 1348 O 8L 2276
12. Fitting	AB 2076-A
13. Bolt	91T 2276

8. Pedal bracket can be altered to fit a great number of different type applications.



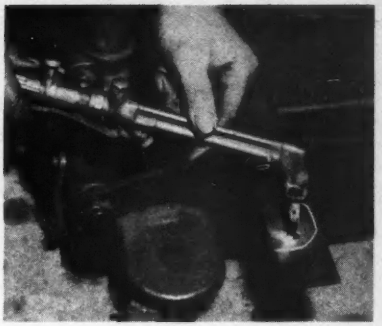
9. This shows trimming necessary to fit the bracket in '29 "A" with stock cowl gas tank.



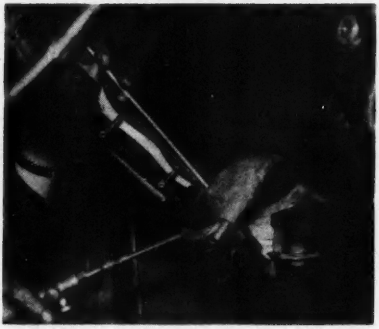
10. Paper template was made of bolt pattern on bracket, taped on firewall, centerpunched.

11. Holes were drilled in position for bracket, which matches cylinder on other side.

12. Another paper template was made to provide for hooking rear of bracket to post.



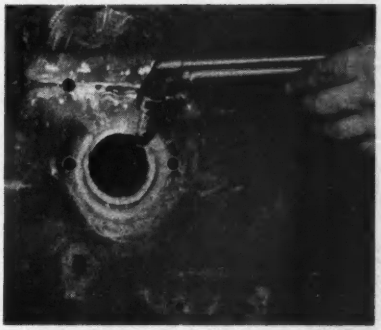
13. Rear bracket support was torch cut from thin plate, edges smoothed on bench grinder.



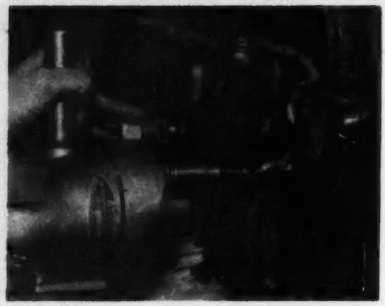
14. With plate bolted to bracket, rear support is brazed to steering column tube.

15. Body seam which interfered with cylinder was cut off with torch, ground smooth.

16. 3/8-inch holes are drilled into firewall, allowing brake cylinder to bolt to bracket.



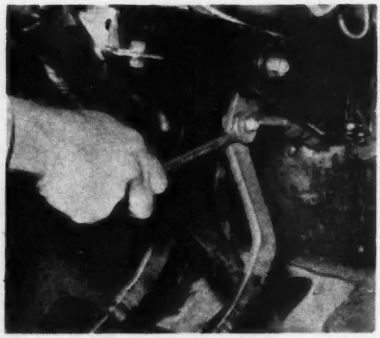
17. Hole for master cylinder snout is cut between lower mounting holes with torch.



18. With brake cylinder mounted, clutch cylinder holes are drilled through firewall.

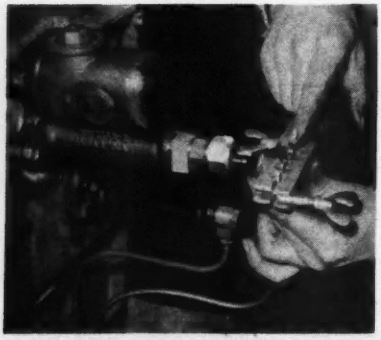
19. Procedure used for mounting brake cylinder is repeated on the clutch installation.

20. Pedals were reshaped to clear column and kick panels, so clutch needed shortening.

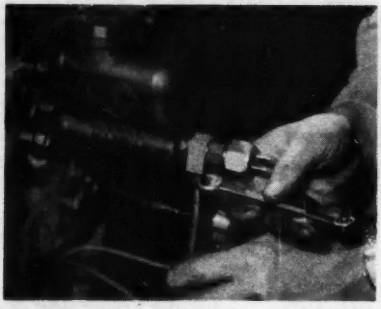


21. Push rod for brake cylinder is bolted into stock position in brake pedal assembly.

22. Hydraulic lines for both clutch and brake are formed from 1/4-inch copper tube.



23. Double-flare tool was used instead of single type to give better pressure seal.



24. After tubing was formed and flared, hydraulic lines on cylinders were tightened.

25. Hydraulic line from clutch is clamped to frame where it joins flex hose from slave.

26. Junction block for brake lines. Flex hose joins rear brake lines on drive tube.

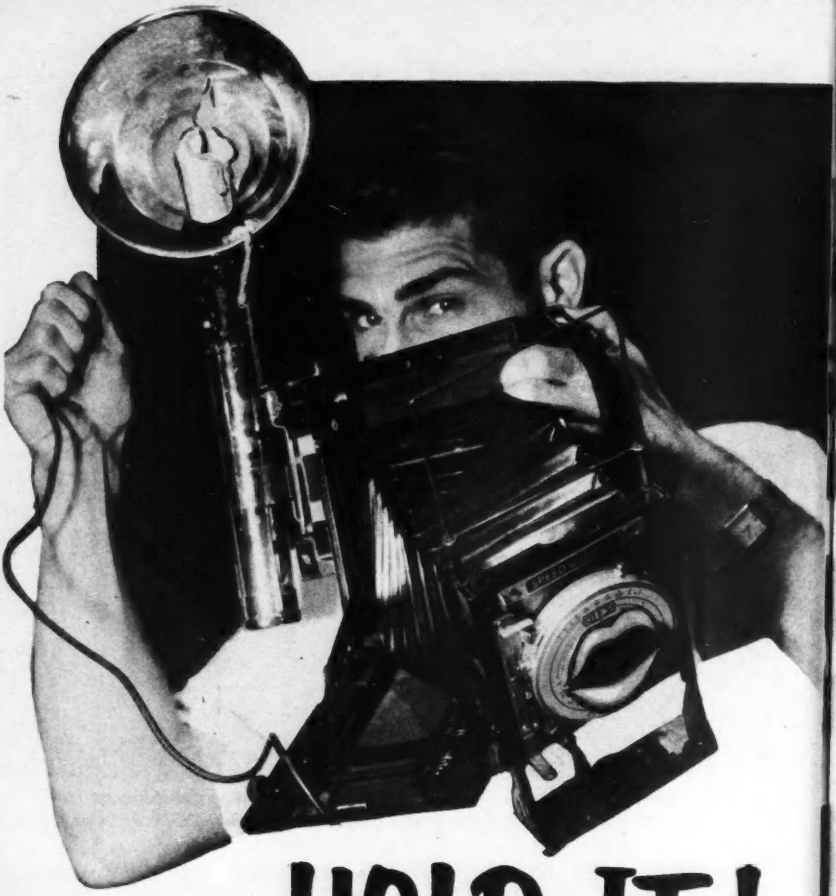
27. Clutch slave cylinder has air bled from it as pressure is applied to clutch pedal.

28. Finished installation. Job should be simpler in a car without cowl gas tank.

29. Here is old parts pile eliminated from under floorboard by installing swing pedals.

NEXT MONTH

Late Hand Brake for Early Fords



HOLD IT!

By Jack Baldwin

Photos by Bob D'Olivo

Don't trip that shutter 'til you read these fundamental tips on photographing your favorite car

YOU PROBABLY won't believe me and undoubtedly will think I've been inhaling too many nitro fumes, but so help me, I saw a guy taking pictures of his custom the other day with the most unusual camera I have ever seen—*or heard!* It talked. Honest, the darn thing put up a big fuss each time the guy was about to do something wrong.

"Listen, boy," I heard the little camera say to the guy holding it, "if you want a decent picture of this car don't point me into the sun. The sun gets in my eyes just like

it does yours, pal! Oh, I'll get you a picture, but it'll be so black, because you're taking it on the shadow side, you'll think you've taken a picture of a black cat digging in a coal pile. Move me around so that I'm in a direct line with the car and the sun—of course, I'm in the middle. Let your shadow be your guide to tell you in what direction to point me. Point me the same direction as your shadow falls if you want to get consistently good pictures."

I moved in a little closer so I could hear better.

"Another thing, pal, look at that background. Lousy isn't it?—Signboards, trees growing out of the car, old auto parts, etc. Let's move the car where we can get better, uncluttered pictures. I find messy backgrounds the most common fault with you photo bugs, practically all of you do it!"

The guy holding the little black box that talked, paid no attention to me as I crowded even closer to listen and to learn something about taking pictures of cars.

The guy with the talking camera did as he was told and raised the box to take a picture. The camera yelped at him, "Hold it pal, I can hardly see that car, you've got me way out of focus. Remember, your eyes focus automatically, but me, I'm just a dumb camera, you'll have to focus my eye for me. How far away am I from that car? If you can't guess, step it off, then set the footage scale to the proper distance."

After pacing off the distance to the car the guy once again raised the talking camera and was about to trip the shutter when the camera hollered, "Whoa! Hold me still! You're making me seasick waving me around like that. Trip my shutter while you're moving me and I'll louse up your picture for sure. Trip that shutter like you'd pull the trigger on a target pistol. Squeeze it off like a lemon, so that I don't jerk when you trip the lever. 'Nother thing, straighten me up, don't tilt me like that. Hey, that's better, I think you're ready now, that is, if you get your finger out from in front of my eye!" The man holding the small black box paused for a moment, then snapped the picture.

I couldn't stand it much longer, so I walked up to the guy and asked him, "Mind if I chat with your camera?"

"Help yourself," he said, as he held the camera out in my direction. "Go ahead and have a chat with it—I'll be back in a few minutes, gotta get some more film you know!"

Never having talked with a camera before, I was a little uncertain just where I should begin. I decided to introduce myself and let things go from there.

"Howdy, my name's Baldwin, I'm a reporter for CAR CRAFT Magazine. Mind if I ask you a couple of questions?"

"O.K., shoot!" echoed a voice from the camera.

"I'm writing an article for CAR CRAFT on how hot rod and custom car fans can get better pictures of their cars. Perhaps you can give me some tips to pass along to our many readers."

"Sure can," the camera's voice said. "Next to poor backgrounds, I think the biggest mistake made by most amateur fans is that they stand so darn far away from the car that we cameras can hardly see it. Tell 'em to move in closer. Better remind them, though, that the closer they get to a car, the more critical they'll have to be about focusing. On the other hand, some cameras, box cameras for instance, don't have any focusing arrangements and they'll get a good picture from any distance up to about six feet. But not any closer!"

"So I've been told." I nodded toward the one-eyed talking box.

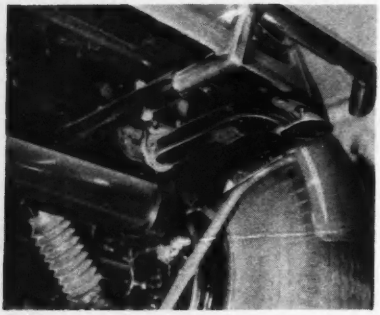
"Think you can explain it to your readers about using a fill-in flash if I explain it to you?"

"I'll try," I told him as I whipped out a pencil and a notebook to take a few notes.

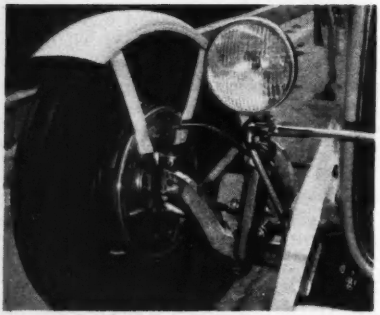
"Lot of camera fans can't understand why flash bulbs are used when taking pictures in bright sunlight. Matter of fact, the brighter the sunlight, the greater the need for using a flashbulb. Ya' see, friend, the bright sun causes deep, dark shadows. The brighter the sun the blacker the shadows. You've seen press photographers blow a bulb while taking a picture in daylight haven't yuh? Well, what they're doing is filling in those deep shadows with the light from the bulb. Watch 'em sometime and you'll see them stand in such a position that the bulb on the camera lights up the shadow side of the subject. Doesn't do any good

(*Continued on next page*)

HOLD IT!
continued



When submitting a car feature to a magazine, keep in mind shots that will be informative from a construction standpoint. Photo above depicts roadster's nerfing bar arrangement and exhaust pipe routing. This type of photo will require flash fill-in.



Here is another illustrative photograph clearly showing roadster's shock and headlight bracket setup. You can also see from this angle how fender braces were attached to the backing plate. This photograph, like one above, will require a flash fill-in.

though, if they shoot the light right on top of the sunlight, sorta has to be shot from the side."

"Engine shots *especially* need a fill-in light," the camera continued. "Sunlight alone creates too many confusing shadows. Can't tell a generator from a carburetor with all those deep shadows sliding around in the engine compartment."

As I was scribbling down notes I heard the crunch of crepe soles on the gravel and, looking up, I saw the camera's owner walking towards us. After the camera introduced us, the topic of conversation swung around to CAR CRAFT Magazine and more pictures.

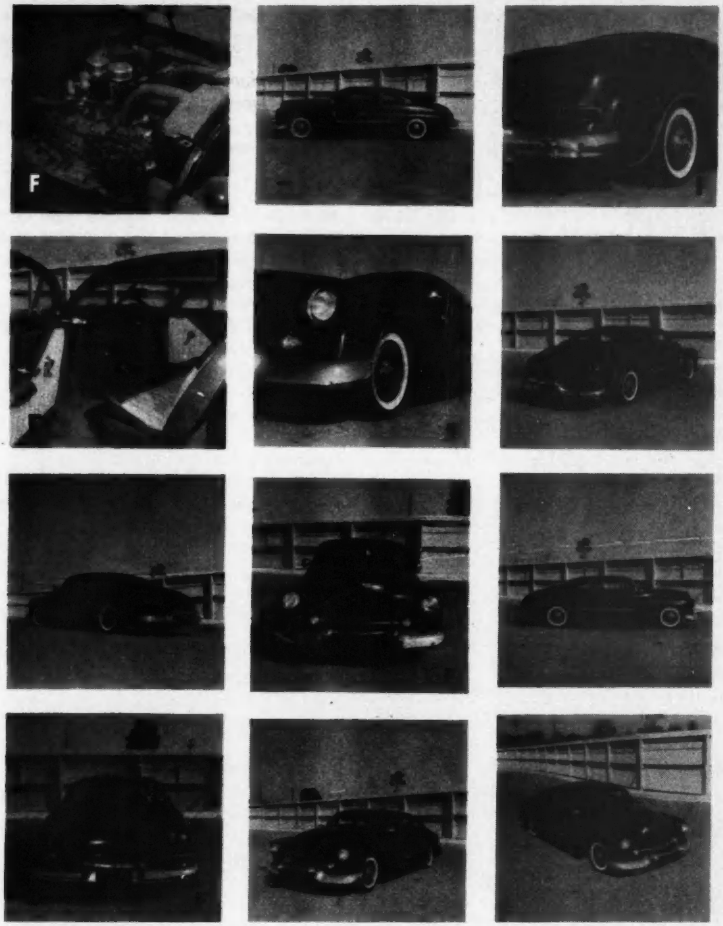
"I've been thinking about taking some pictures," explained the camera's owner, "of a couple of real clean hot rods and customs here in my hometown and submit them to the magazine. I was wondering if you could give me some suggestions about what the magazine editors need in the way of picture coverage?"

"Well, I'll try. CAR CRAFT is in the market for good pictures of hot rods and custom cars; especially when they are accompanied with a short article describing the car and the owner or builder. If you shoot a car for a feature article, the editors like to see sharp, well lighted, 8 x 10 glossy prints of good quality taken from these angles. Here, write 'em down," I told him, as I handed him my pencil and notebook.

"Front, rear, both sides, three quarter front left and three quarter front right. Then three quarter rear left, three quarter rear right, interior right and left sides, and finally the most interesting side of the interior and engine. Now, in addition, they want closeups, real closeups of construction detail that is in any way unusual or different. These might be the suspension system, the grille, the taillights, or anything that shows how the car was built. Got that?" I asked.

He nodded and kept on scribbling. "You know," I continued, "if you don't know anything about writing, why not team up with some guy that works on a newspaper or has knowledge of journalism. You take the pictures and let him do the writing. Matter of fact, if you write to the editors they'll send you a form to use as a guide. Shows what

(*Continued on page 28*)



A typical proof sheet from our own photolab shows how good coverage can be obtained using one roll of film, or twelve exposures. They are contact proofs, showing photos exactly as they appear on the negatives. Note on all overall shots, the "air" left around the car to allow for special cropping when enlarged for layout use in the magazine. Camera was moved in close for detail pics of the headlights, taillights, and wheel well trim. Flash fill, used on all photographs marked "F," should be balanced with the daylight exposure. This fill light eliminates dark shadows and helps to bring out detail in construction. Front, rear, and both side views were taken from the waist level; three-quarter front and rear shots vary from overhead to near ground level. This gives the editors not only a variety of views, but different angles as well. Engine shots should be taken from most interesting side, interior pics must show dash, floor rug, and part of seat and door panels. In this one series of photos, car was moved seven times to keep it in proper position.

HOLD IT!

continued

pictures to take and what information is wanted about the car and the guy who owns it. The magazine pays top rates for photo articles like this and they especially like to get features on cars from the Middle West and the East," I informed him.

The guy tore the sheet he had written on from my notebook and handed it back to me. I took the book and turned toward the camera. "Would you mind if I just ran through my notes quickly with you to make sure I have everything?"

"I got the time if you have," said the camera.

"Well, first of all, picture takers should watch the background, keep it plain. Next, don't shoot into the sun, let the cameraman's shadow be the clue and point the camera in the same direction as the shadow falls."

"You're right! . . . that's right," commented the camera.

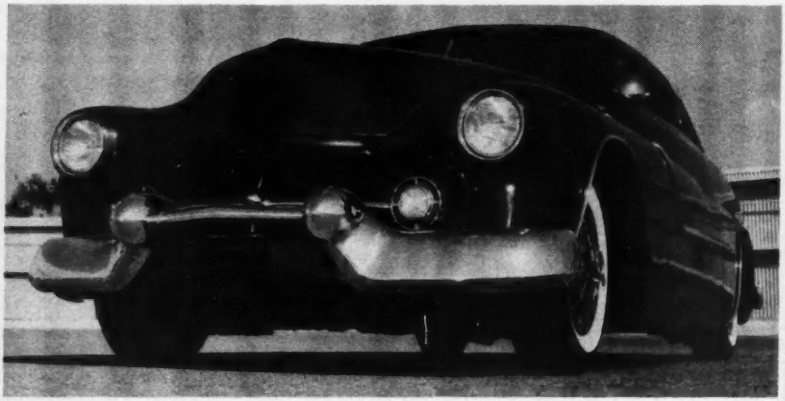
"Hold the camera still," I continued, "Make sure it is not tilted. Set the focusing scale to the right distance from the object, and make certain nothing is obscuring the lens."

"Better add to that to watch out for chopped off images," echoed the camera. "Make certain everything that is wanted in the final picture is in the viewfinder. A dirty lens can foul up a good picture, too. But warn your picture-taking fans not to clean a lens with anything but a recommended lens cleaning tissue. Lens scratch mighty easily," cautioned the talking camera.

"Don't stand too far away from the car," I continued reading.

"Yep, that's right," said the camera. "And, another common error I might mention, is double exposures. Tell them to get in the habit of turning to the next film number immediately after taking a picture. It's too easy to forget whether or not the film has been advanced after taking a picture.

"Speaking of film," continued the camera, "the best advice that can be given about ex-



Here is an example of how you can get what might be called artsie craftsie, *otherwise meaning a low distorted view that could possibly be used as a lead-in photo for the feature's layout. In this particular shot the camera was positioned almost on the ground, looking up at the car. This type of photo is not compulsory when submitting a feature, but editors do like to have on hand two or three of these shots for layout's sake. If you do wish to submit photos of this nature, have them leading from the outside of the page in towards center of magazine and submit several high and low angles from both sides.*

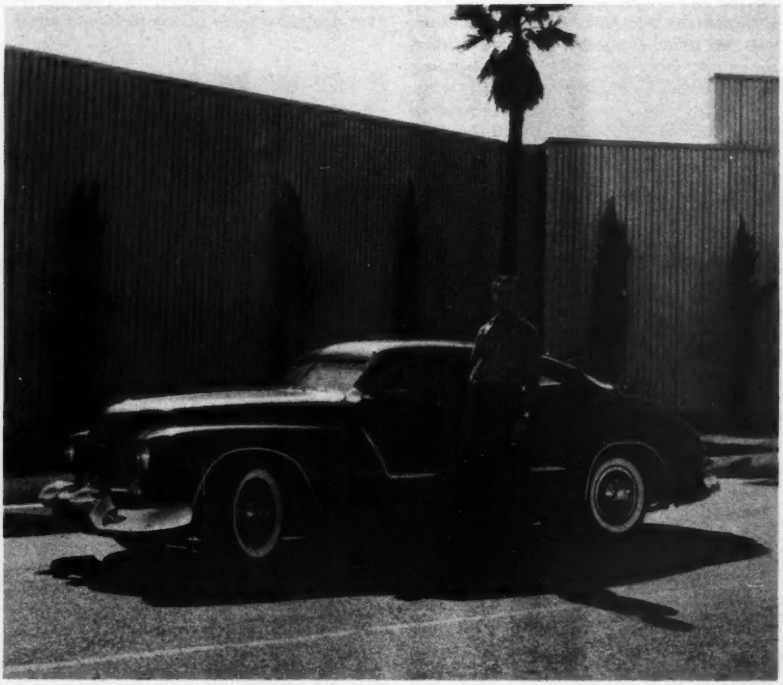
posure is to follow the manufacturer's directions. They are printed on a sheet or on the box of every roll of film. A few seconds spent reading directions will save many wasted dollars and prevent bitter disappointments due to overexposed or underexposed negatives."

At this point the guy who owned the talking camera broke in with, "I suppose most of this picture taking of cars for articles is pretty much a matter of 'record shots.' Not much to get arty about, is there?"

"On the contrary," I said. "The editors like and want pictures that show some composition. Just because the photos show an automobile is no reason why the pictures can't be pleasing to look at. Proper surroundings, people doing things, and interesting angles all help create pleasing pictures and aid in making up the stories' layout."

"Well, I've got to be shoving off." I stood up and shook hands with the guy and automatically turned toward the camera with my hand outstretched. I must admit I felt just a little bit silly. Whoever heard of anyone shaking hands with a camera? Then again, whoever heard of a talking camera? As I slowly walked away I looked at my notes and wondered if the editor would believe that I had actually interviewed a talking camera. He

(*Continued on page 66*)



We decided to sneak in this example of how not to photograph a car. It shows a few of the common mistakes made by amateur photographers, and just what should be avoided when shooting for a magazine. To begin with, it was shot directly into the sun, accounting for lack of detail and the heavy, dark shadows. The front wheels are turned at an angle and those tall shrubs in the background really louse things up. We have yet to figure out where the palm tree is coming from, and most people do not photograph too well with cars unless they are approximately 5'6", 36-24-36, 124 lbs., have bikini and will travel . . . ?

DO'S and DON'T'S

OF BRAZING

Photos by Bob D'Olivo

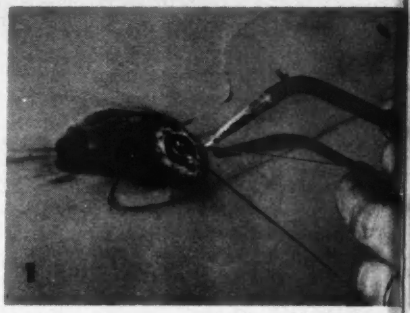
A FEW months ago we gave you the fine points on how to use a cutting torch along with the basic fundamentals of welding. Now we come to another adhesive method that custom shops constantly use for bonding metals together, commonly known as *brazing.*

Actually the process of brazing, or bonding metals together with brass, follows the same procedure as that of soldering, in fact, brazing could be considered the strongest of the soldering family. The surface must be thoroughly clean before starting work and a bonding agent must be used. In the case of brass, this agent is called *brazing flux.*

Brazing has several advantages over welding when doing custom body work. Chief advantage is the heat element. When intense heat is applied to the body metal of a car, the metal tends to warp. The more heat, the more warpage, and so on down the line. Since less heat is required when working with brass as compared to welding, the advantage is obvious. I don't think any of us cherish the idea of standing over a car all day working out warped areas with a picking block and hammer. Another edge that brass has over welding is that it is a soft material and consequently easier to finish off with hand tools such as vixen file, etc. The rod sizes that are most commonly used are 1/16 and 3/32 inch diameters. These sizes will afford enough material for almost any job.

In the following photo sequence you will find the right and wrong approaches to brazing along with how to finish off a brazed area in preparation for finish paint.

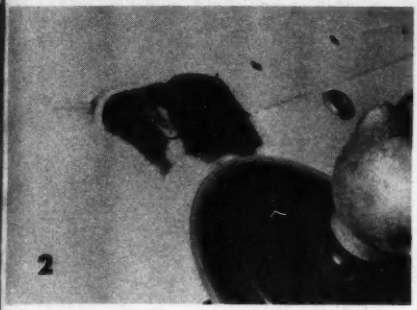
EDITOR'S NOTE: We wish to thank George Cerny's Custom Shop, Compton, California, for supplying information and the practical illustrations for this feature.



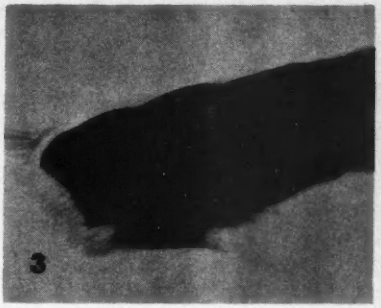
WRONG—*A common mistake made by beginners when first starting to braze is that they don't thoroughly clean surface of metal.*

RIGHT—*Before you start to fill the holes it is advisable to countersink openings, giving more surface for brass to adhere to.*

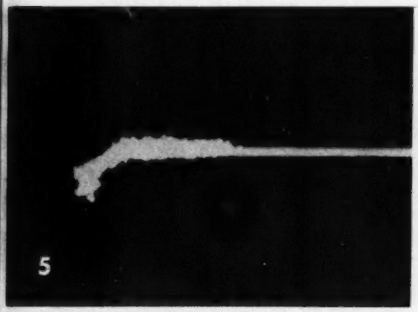
WRONG—*Torch heat is very important. Here, flame has too much feather, will not create enough heat to work brass properly.*



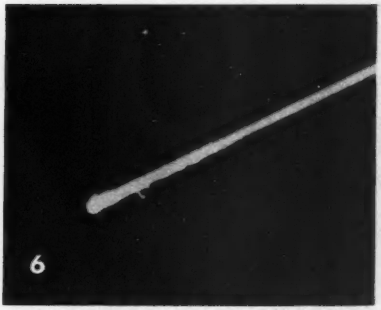
RIGHT—*The first step in brazing consists of grinding the surface clean of paint. Use a 24 open or closed coat grinding disc.*



RIGHT—*When grinding paint from the surface, it is only necessary to grind paint back a few inches from the working area.*



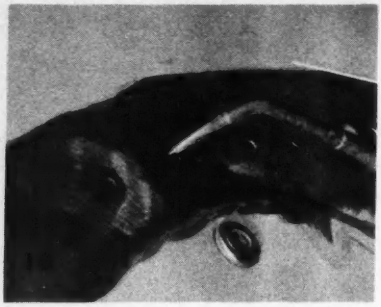
WRONG—*Another fault is over-heating brass rod before inserting it into flux container. This causes rod to pick up excess flux.*



RIGHT—*Pass flame over rod slightly, insert into flux. The Rod should appear as shown. Re-flux rod when flux length has been used.*

WRONG—*Here is just the opposite flame. This flame would yield too much heat and would cause an excess amount of warpage.*

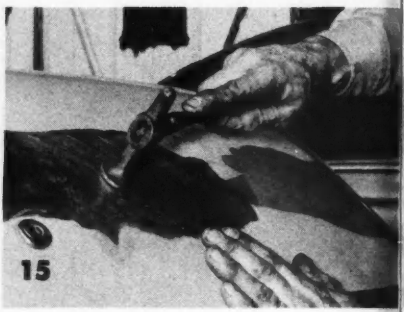
RIGHT—*For correct flame use a No. 1 or No. 2 tip and have a very slight feather, with no blowing noise escaping from nozzle.*



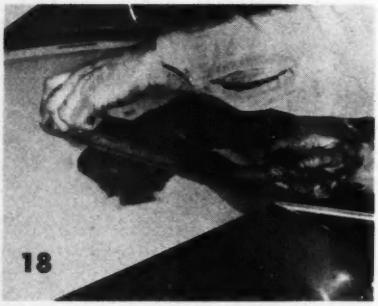
WRONG—*Do not preheat surface before starting to braze. This will cause excess warpage and brass will roll off surface.*

WRONG—*Another fault with beginners is that they try to heat only the rod. Brass will not adhere to metal when this is done.*

RIGHT—*After the brazing is completed, the next step is to work out low spots, warped areas with a picking block and hammer.*



RIGHT—*After warpage is worked out you will notice slight ridges. These are dressed down by tapping lightly with hammer.*

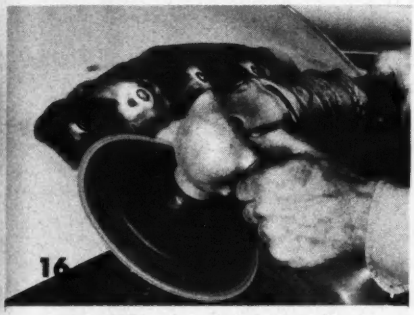


RIGHT—*Hand file surface with vixen file. File from at least three different directions. This method will work out low spots.*

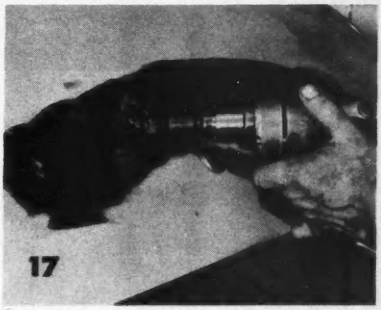
RIGHT—*Featheredge rough surface of old paint with 80 sandpaper (dry) or 220 (wet). When sanding, always use block with paper.*

RIGHT—*Heat both surface and rod at the same time. An even temperature is maintained, brass flow can be easily controlled.*

RIGHT—*When filling hole with brass, the opening should be built up simulating a small pyramid shown in illustration above.*



RIGHT—*Next, the grinder is employed once more, set up with a 36 closed coat grinding disc. Grind the surface to semi-smoothness.*



RIGHT—*The areas that have been brazed must be thoroughly cleaned of impurities, such as flux, etc. Use rotary brush, drill.*

RIGHT—*Apply metal prep solution to bare metal only with clean cloth. Wipe dry immediately, do not let liquid dry on surface.*

RIGHT—*Another liquid solution of wax and grease remover is applied to old paint. Surface is ready for prime, then finish paint.*

FROM AN OREGON BODY SHOP'S BONEYARD COMES THIS . . .

HYBRID HAULER

Photo Story by Peter Sukalac

IT MAY be fascinating to see great oaks from little acorns grow, but if you really want some kicks you should see a guy like Nat Bosco of Portland, Oregon, build a custom car.

Nat's a conservative-type gear design engineer. True, he is a Ford enthusiast, but not nearly so gone as some fellas. Through the years Nat kept fighting the urge to build his own crazy creation. He was winning this fight until he met Dee Wescott. Dee, as any reader of Trend publications knows, runs a custom body shop at Damascus, Oregon. Nat noticed the many cast-off components lying around Dee's shop. Frames, wheels, bits and pieces of bodies. You guessed it! The sight of all the salvage melted his will power and he began collecting the odds and ends with the idea of using them in his own car.

To begin, Nat selected a '36 Ford chassis. He hauled the thing home, cleaned it up and set to work rebuilding all the worn parts. A set of '39 Ford hydraulics replaced the well-worn set of rattlin' rods. The old shocks were replaced with 50/50 Houdailles. 15-inch wheels with 6½-inch rims were installed on the '36 hubs.

Nat then picked up a '51 Ford block. Since he wanted better than stock performance, but not wishing all-out power from the

Nat didn't miss restyling a thing on his scrap-metal-built pickup. Grille opening was framed with tubing and center bar is from '54 Chevy. Headlight frames are from '53 Buick and are frenched into fenders.

mill, Nat decided to do very little except rebuild the engine. A stock crank, rods, pistons and valves were put together. The camshaft was sent to Harman & Collins for a Sportsman regrind. Zephyr springs added a little "boiinng" to the valves. The heads were milled .040 before they were installed. A set of Belond Equaflows completed the job. The mill was dropped into the chassis and the works towed out to Dee's shop.

Nat and Dee sorted out the body parts which had been collected. On hand were: a '50 Ford hood, '49 Ford left front fender, '51 Ford right front fender, two '50 Ford rear quarters and a left front door from a '50 Ford sedan and a right front door from a '51 Ford sedan. Man, what a conglomeration.

Dee channeled the body a full 7 inches and radiused the wheel openings. A four-inch section was added to the rear quarters to make them meet the doors. The parts were then set up in a jig and welded to a built-up firewall and floorboards. The tops of the doors were cut off and welded on the firewall to form the windshield frame. Dee nosed, peaked and rounded the corners of the hood and installed it in place. A '53 GMC pickup cab was located for the top and this was chopped 4½ inches before being welded in place. Since Nat didn't care for a closed car, he had Dee fill the tops of the doors. Then a '49 Ford dash was installed.

A set of '53 Buick headlight rims were frenched into the front fenders. '51 Buick taillights were frenched and tunneled into the rear quarters. This rear box was then formed by rounding in the tops of the rear quarters. Regular sheet stock was used for the floor and inside bed paneling. The tailgate was made up from sheet stock to match the body contour. A special bumper was then built to

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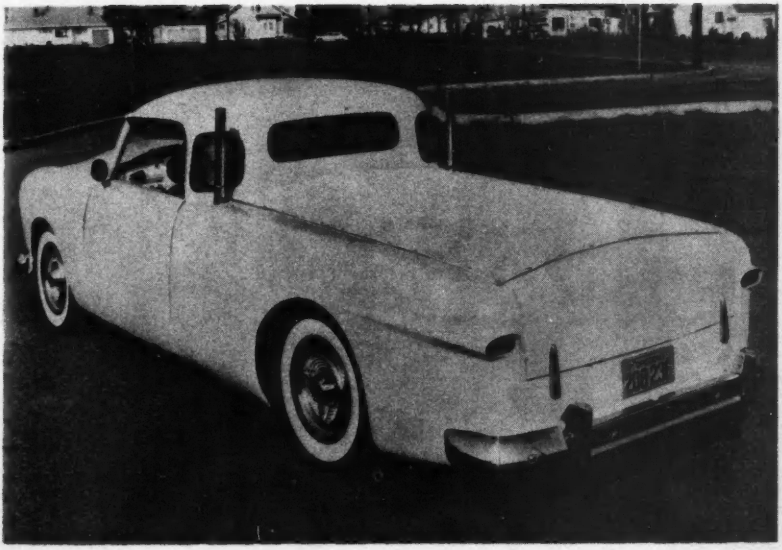
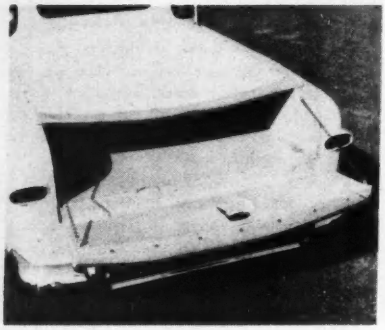


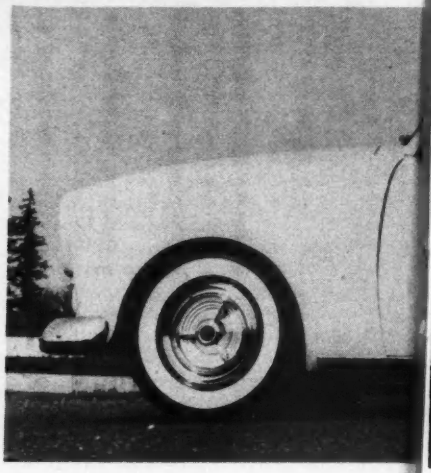
Rear view offers same low, sleek original styling. Cab was scrounged from a GMC pickup and was chopped a full 4½ inches before being installed. '51 Buick taillights were tunneled into stock Ford taillight openings. Wheel openings have been cut out for full radius styling.

HYBRID HAULER

continued



Rear door, bed and paneling of pickup was completely hand formed from sheet metal.



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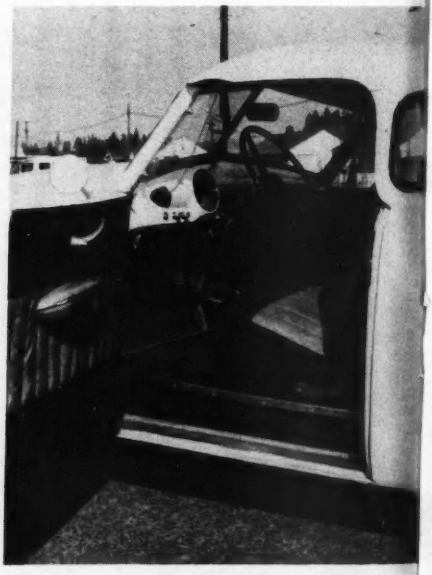
allow the tailgate to rest in the open position. This was done by using the center section of a '49 Ford pickup bumper and tips from a '50 Ford bumper. The guards were built up with a flat top.

The body was then shot with Aztec yellow enamel. '54 Merc side trim was added after the paint was dry.

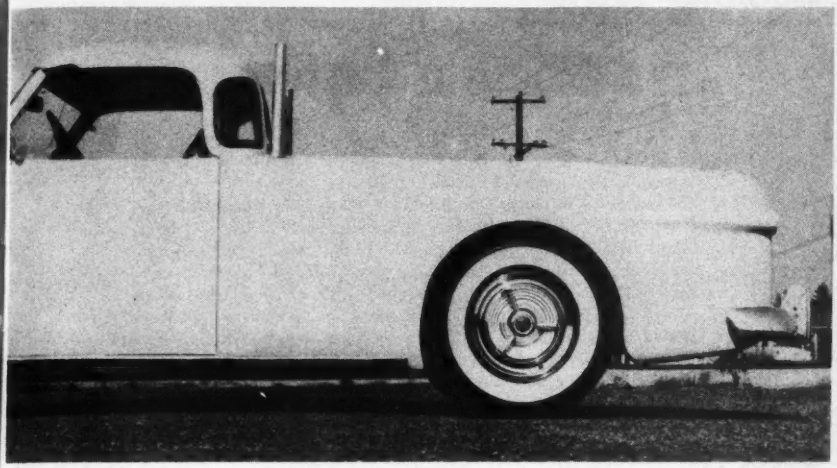
Nat then took his shiny gem out to the Auto Trim Service at Gladstone, Oregon. There, Johnny Laidlaw trimmed the interior with brown Naugahyde and brown carpets to match. The seats were also trimmed in the same material after they had been chopped 4 inches. '53 Olds ash tray arm rests were fastened to the doors to complete the inside trim.

When equipped with '53 Olds Holiday hub caps and whitewalls the car was a fitting realization to Nat's yearning for something different. Being an open car, he has since added Plexiglass windwings to the doors and has run the exhaust pipes up through the pickup body.

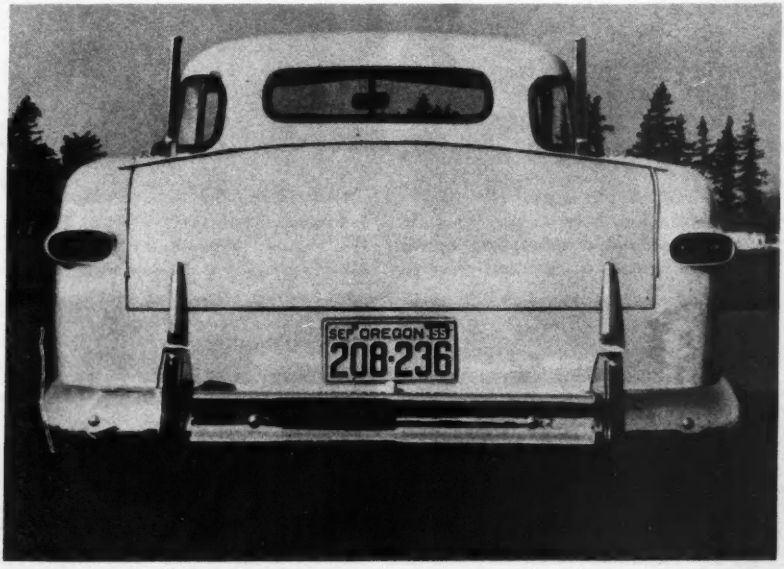
Nat says, "If you get the urge, don't fight it . . . I've had the time of my life building this rig."



Interior received the full roll and pleated treatment in brown and tan Naugahyde contrasting the Aztec yellow exterior color.



The deep 7-inch body channel of the truck gives the very low and underslung appearance. Accessory trim consists of '53 Olds Holiday hubcaps and '54 Merc lower trim rocker panels.



The rear bumper arrangement is unique inasmuch as the center section is from a '49 Ford pickup with '50 Ford tips spliced on at each end. The bumper guards have been built with flat tops so as to support the tailgate when it is laid back in an open position.

HERE'S HOW:
Building a Custom
Part III

WE REALLY roll up the old shirt sleeves this month as we head down the back stretch of building our custom. On tap are four items: First off is how to fill in the center section of the lower bumper. Next comes the removal of the hood trim and filling of the small bolt holes. Third up is finishing off the upper leading edge of the grille opening and the hood. Last, but not least, is the installation of the popular '52 Lincoln grille teeth to the stock wrap-around grille bar. This must sound like enough work to keep a guy busy 'til winter, but actually all the items are ones of a simple nature that can be accomplished in all that spare time that everybody keeps telling us we have these days. Next month we'll be rounding the last turn and heading into the homestretch as we move to the rear fender airscoops, shaving the trunk deck and building the bumper tip exhausts.—See yuh then!

Filling Center Section of Lower Bumper:

1. After removing lower bumper from car, make up cardboard template matching the half round contour of the stock bumper.

2. Fill-in pieces are cut from 16-gauge sheet metal (extra heavy for bumper). Sheet metal shop will roll contour for you.

5. The section filled will now have to be ground to semi-smoothness with an electric grinder set up with a 24 closed coat disc.

6. Now tinning compound is applied to the new paneling. Use small steel wool pad to scrub on compound while heating surface.

Photos by George Barris

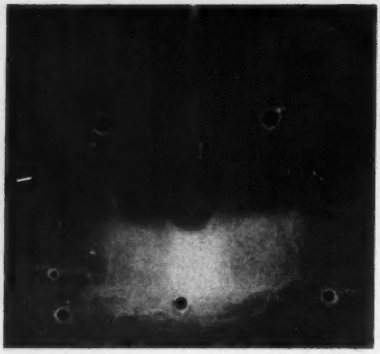
3. After checking out correct alignment, fill-in pieces are tack welded into position, then solidly welded to the bumper.

4. There will be an opening at the top of the bumper that will also have to be filled in with the same heavy gauge sheet metal.

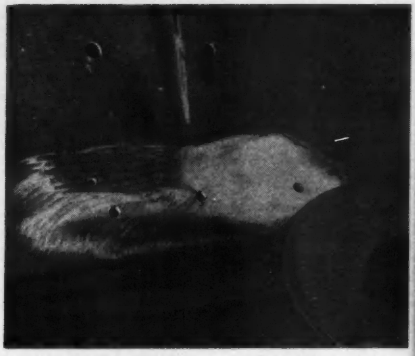
7. Melt stick lead onto the surface, using a soft flame from the torch. Wood lead paddle is used to fuse lead patches together.

8. New center section is now hand filed to smoothness with vixen file. To finish off, featheredge sand, metal prep, then prime.

HERE'S HOW—Removing Hood Trim AND Filling Holes:



1. First step is to remove the Merc medallion and all trade name lettering from hood.

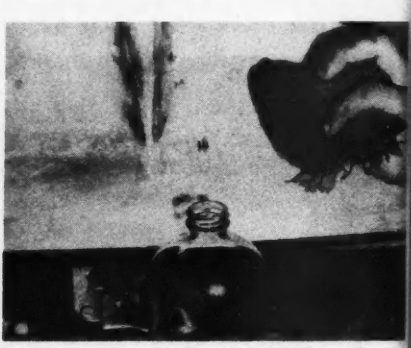


2. An electric grinder set up with a 24 closed coat disc is used to remove the paint.

5. After brazing holes closed, a wet pad is applied to the surface, minimizing warpage.

6. All low spots and warped areas are worked out with picking block and hammer.

9. Old paint is now featheredge sanded with 80 (dry) sandpaper or 220 (wet) paper.



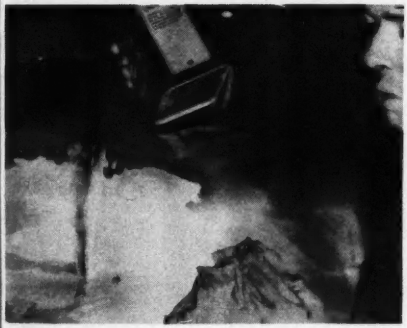
10. Metal prep solution is applied to the bare metal. Wipe surface dry immediately.

3. Countersink all holes before brazing. An oversize drill is used for countersinking.

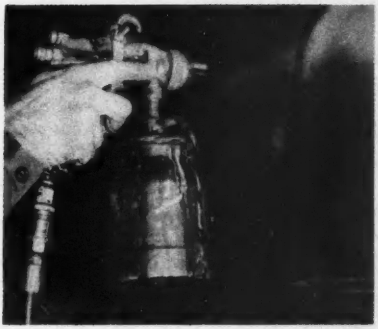
4. Now with 3/32 or 1/16-inch diameter brass rod, braze all the small trim holes closed.

7. Using a 36 closed coat disc, surface of working area is ground to semi-smoothness.

8. Now the surface is finished off to perfection by hand filing with a vixen file.



11. Wax and grease remover is applied to the old paint, removing all the impurities.



12. Prime surface, blocksand with 360 (wet) sandpaper. Surface is ready for finish coat.

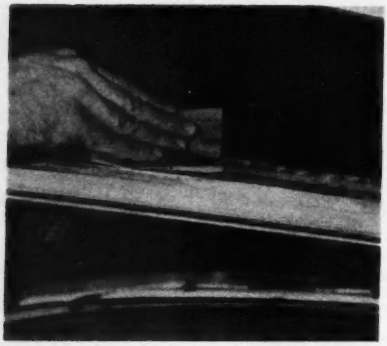
HERE'S HOW—Rolling Hood AND Inner Fender Edge:

1. First remove chrome trim from leading edge of hood and inner fender openings.

2. Grind paint from surface with electric grinder set up with a 24 closed coat disc.

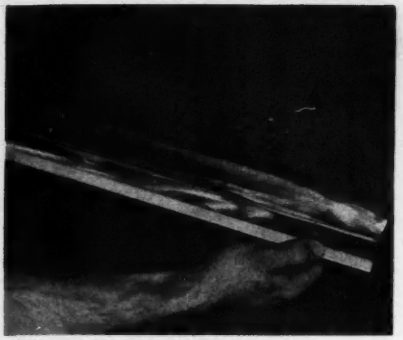
5. With rod brazed into position, grind surface and thoroughly clean brazed areas.

6. Tinning compound is applied with small steel wool pad while heating the surface.

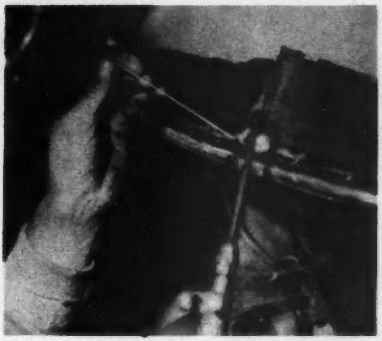


9. Old paint is now featheredged by using 80 sandpaper (dry) or 220 paper (wet).

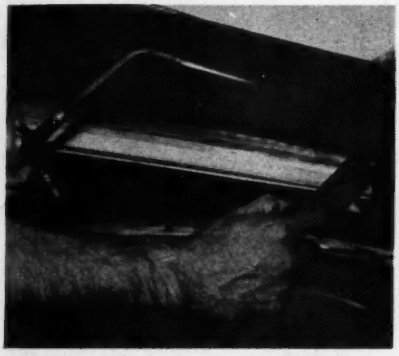
10. Wax and grease remover is applied to the painted surface, removing all impurities.



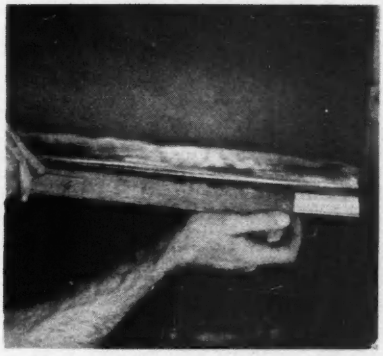
3. Now fit ½-inch hot roll rod to the edge of the hood and the inner fender openings.



4. After rod has been cut and contoured to fenders and hood, braze it into position.



7. Melt stick lead onto surface and then fuse and mold lead to rod with lead paddle.



8. Finish contouring to perfection by filing surface and leading edge with a vixen file.

11. With a clean cloth, apply metal prep liquid to bare metal. Wipe dry immediately.

12. Surface is now primed, then blocksand with 360 sandpaper (wet), finish painting.

Continued on page 62

Teen-age Torpedo

Automotive Design Student Practices What the Teacher Preaches

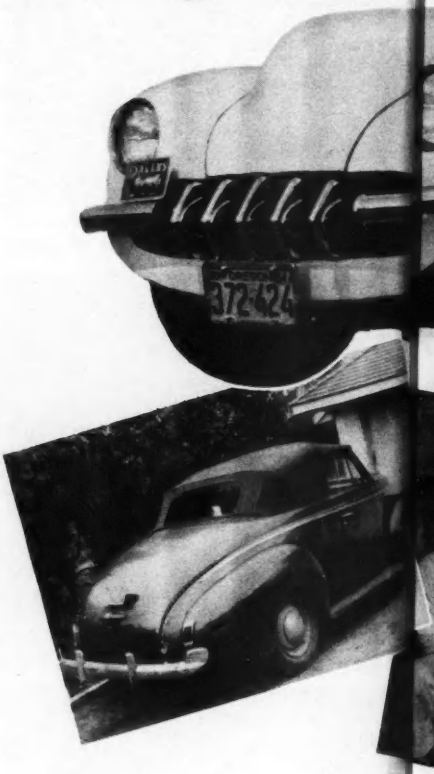
By Bob Greene

I ASK YOU—what true creative artist would commute to and from his automotive design class in art school in an old stock-bodied hack? The mere thought of such a scene literally stood 19-year-old Gale Morris on his ear, and yet, this budding young designer was in no financial position to go for one of the new super sportsters. The answer? A '40 Merc convertible, several spare parts from miscellaneous cars, some fiberglas and 1000 hours of hard work.

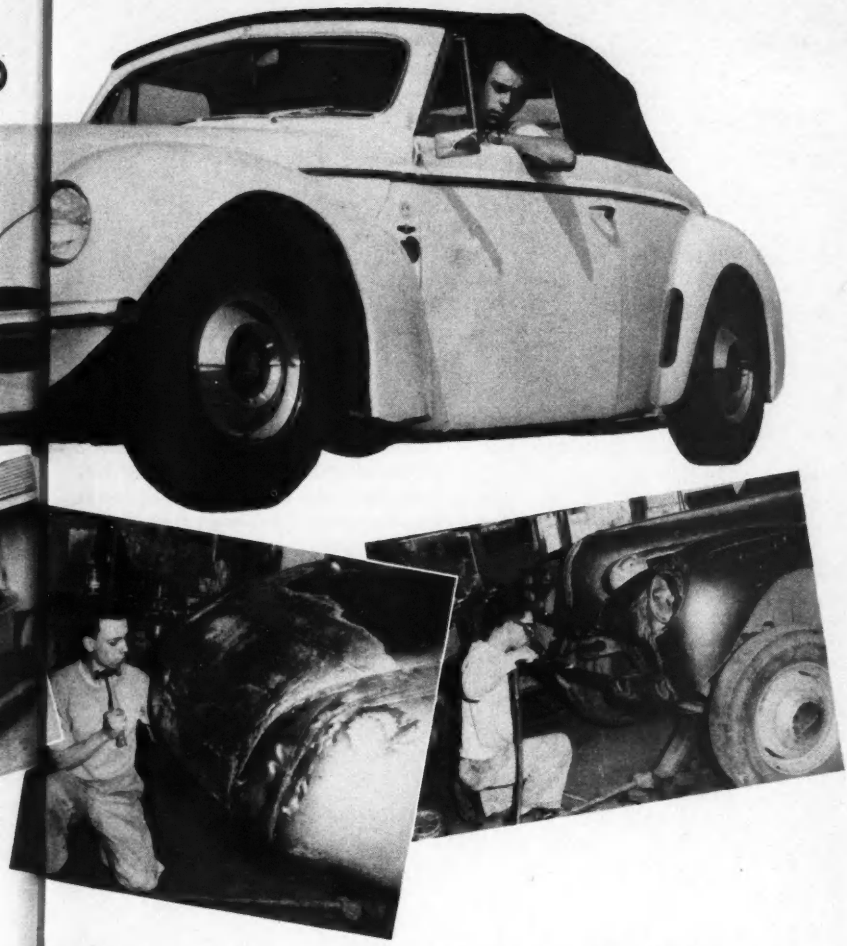
Gale chose the fiberglas route to short cut the expensive body shop tools normally needed for such a job. He did all of the work himself with the exception of glass installation which includes a one-piece windshield from a '52 Studebaker Land Cruiser. The strange part is the tremendous effect realized by channeling the body down over the frame 4 inches, almost giving the appearance of having been sectioned. The only other lowering devices are a Dago axle on the front and reversed eyes in the main leaves front and rear; the spring shackles remain stock.

Beyond the rakish flare of the fender wells, the prime attention-getters are the grille and bumper treatments. Made up of '54 Chevy components, the grille is a combination of 2¼-inch seamless tubing and the stock bars, all of which doubles as a bumper-grille combo. At the rear, the seamless tubing is used again, with sections from larger tubing serving as end pieces and protective housings for universal taillights.

Feeding the new powerplant, a stock



Gale Morris' cleverly restyled '40 Merc is ... copes with his own customizing. Ga... inch seamless tubing. '53 Merc headlig... cruiser was installed. Side trim originate...



...e example of what can be accomplished when a young enthusiast digs in and personally ...ilized '54 Chevy vertical bars for the center of the grille. End bars were made from 2½- ...ms were used for frenching in the lights. One-piece windshield from '52 Studebaker Land- ...om a '52 Chevy. The exhaust pipe tips have been brought out just in front of rear fender.

dimension '53 Olds, are two 14-gallon gas tanks mounted beneath the trunk floor; a selective switch on the dash bringing one tank or the other into use.

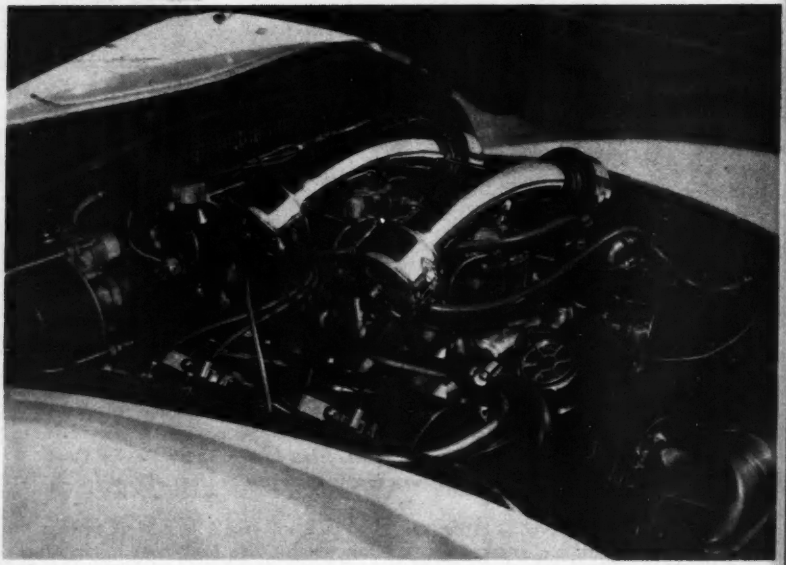
You'll still take a Jag? Well, perhaps, but first weigh Gale's bank book in the balance. It shows a deficit of only $900, including the $82 original purchase price!

CONTINUED

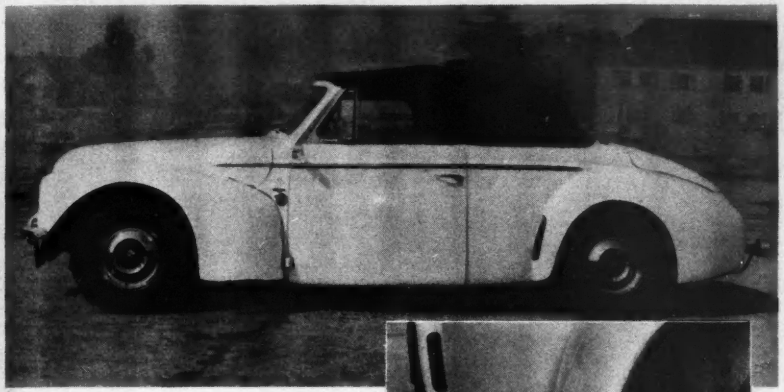
Teen-age Torpedo continued

Radical low slung appearance is due to the deep 4-inch body channel over the frame. '39 Cad rear seat is installed for seating.

Instead of applying lead to finish off bodywork, Gale worked the body to semi smoothness, then covered the surface with fiberglas.

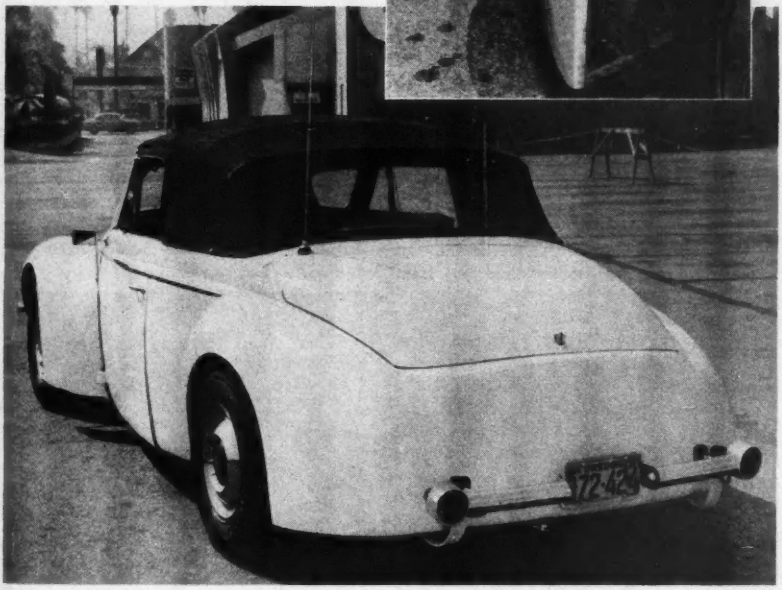


Stock Merc powerplant was replaced with this warmed-over '53 Olds, sports Iskenderian cam, reworked heads and dual Stromberg carburetors. Power brakes have been installed.



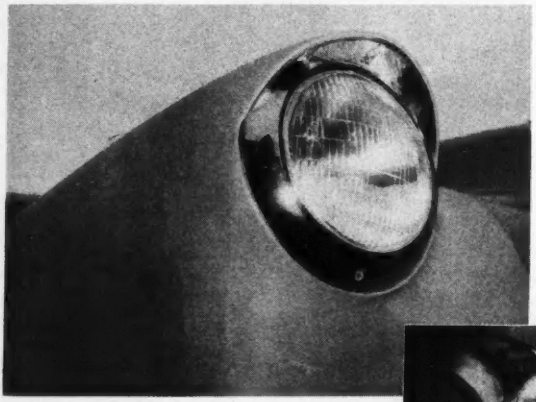
Merc has slight sports car effect with its radius wheel opening and low rake. Color is egg white with black top. Interior is upholstered in green and white Leatherette.

Engine compartment was slightly cramped, so Gale placed the battery in fender well.



Body has been completely frenched with all body seams eliminated. Rear bumper bars were made from 2¼-inch seamless tubing. Taillights are positioned into large bucket rings.

TORCH TIPS



INSTALLING THE NEW '55 CHEVY HEADLIGHT RIM

By Dick Day

Photos by George Barris

WITH THE new headlight fad rapidly switching to lipped and shaded type rims—Chevy's latest a la Cadillac frame promises to be one of the most popular and versatile rims of the year. Its big advantages are that it can be adapted to almost any postwar make or model and, when installed, it does not necessitate reversal of the seal beam unit into the headlight opening making lens adjustment inaccessible.

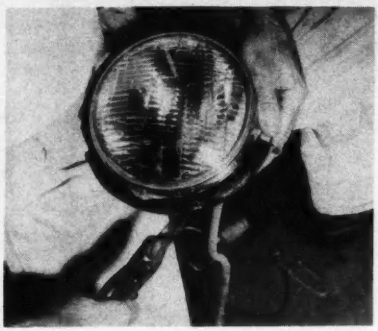
From a styling standpoint, the rim can be finished off in three different manners. First, it can be installed such as it is on the late Chevys with a slight peak trailing the side of the fender. Second, the peak can be eliminated completely. Third choice is to line the frame with round rod, giving it a novel bucket fit and rolled edges.

If the later method is your choice, you will find it incorporated in this story along with installation details of the plain rim. For those of you who wish the peaked motif, this can be done with a small amount of lead.

(Work was done by the Barris Brothers Kustom Shop, Lynwood, California)

1. First step is to remove the outer chrome rim and the headlight from the opening.

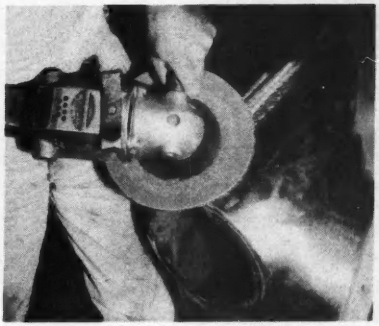
2. With a screwdriver and hammer, also remove all of the small attachment clips.



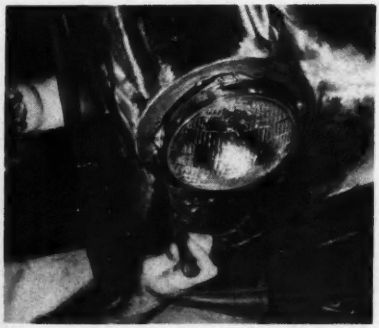
3. A small notch is cut out of the headlight's bucket at each clip position.

4. Slide on attachment clips with the threads to the rear side of the bucket.

5. Notch bottom edge of opening, allowing rim screw to fasten to the reversed bucket.



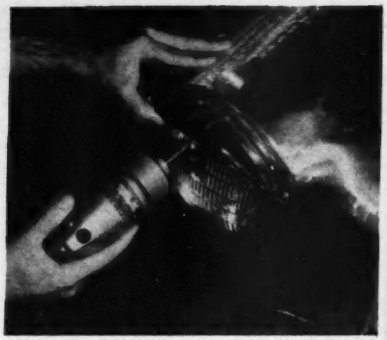
6. With electric grinder, set up with a 24 closed coat disc, grind paint from fender.



7. Install the headlight bucket from the rear and the sealbeam unit from the front.

8. Now place the rim into position and attach it to bucket with lower rim screw.

9. Two screws have to be welded together to span the distance at the top of rim.



10. An 1/8-inch hole is drilled into bucket for top rim screw. Tapping is not necessary.

11. The rim is now secured into position at the top with the special metal screw.

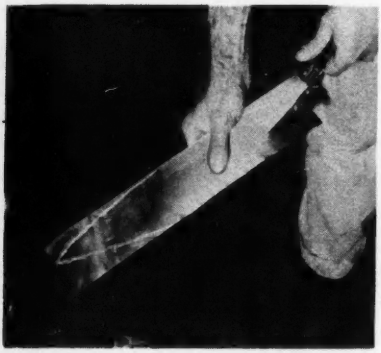
12. 1/4-inch round hot roll rod is now formed to the lower curvature of the rim.

13. Rod is first spot brazed in place, then light unit removed, and rod brazed solid.

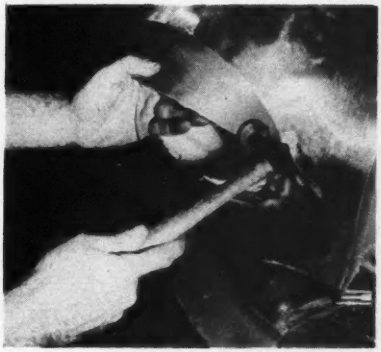
14. Refit rim, form upper part of rod with dolly and hammer. Then braze together.

15. With rod ring complete, now cut out a template from cardboard for fill-in piece.

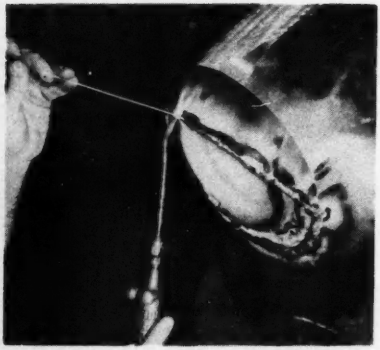
16. Template is placed on a piece of 18-gauge sheet metal and pattern scribed off.



17. Pattern is now cut out of sheet metal with tin snips following the scribe lines.



18. The small sheet metal filler is now bent and formed to the correct contour.



19. First spot braze filler piece into position, then braze solid to fender and rod.

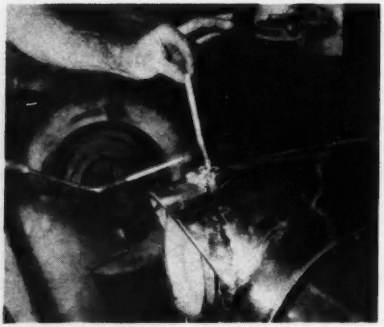
20. All low and warped areas are worked out with picking block and hammer.

21. The area is now ground clean with grinder setup with a 36 closed coat disc.

22. Now a rotary brush and electric drill is used to thoroughly clean brazed beads.

23. Tinning compound is applied to surface with a steel wool pad and torch heat.

24. With a clean cloth, while applying heat, wipe surface that has just been tinned.

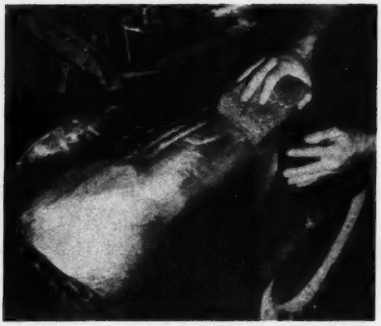


25. Using a soft flame from the torch, now melt stick lead onto the immediate surface.

26. Lead patches are now fused together with wooden paddle and heat from torch.

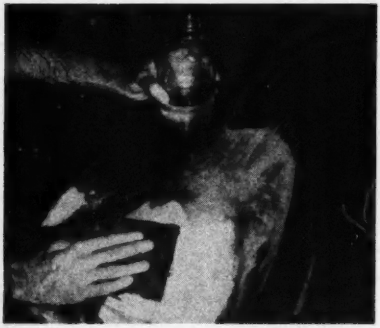
27. Grinder is once again employed, this time to grind surface to semi-smoothness.

28. To finish off surface to perfection, hand-file working area with vixen file.



29. Bare metal, old paint edges are feather-edge sanded with 220 sandpaper (wet).

30. Wax and grease remover is now applied to the painted area to remove impurities.

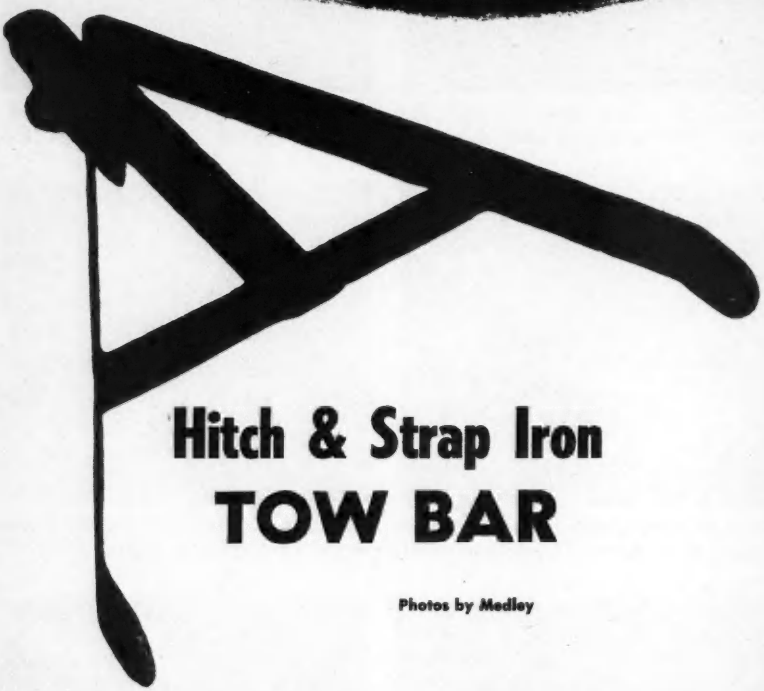


31. To the bare metal area, a metal prep solution is applied, combating corrosion.

32. Surface is primed, then block-sanded with 360 paper (wet), finish paint next.

NEXT MONTH
Frenching '49-'51 Ford Taillights

Garage Gimmicks

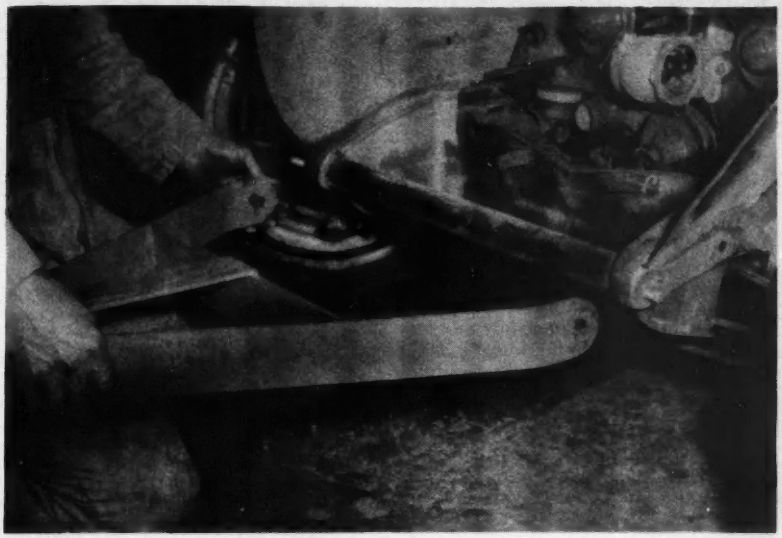


Hitch & Strap Iron TOW BAR

Photos by Medley

IT IS a well-known fact that one of the handiest items for a guy to have when building a car is a tow bar, so that once he gets his machine on four wheels he can tow it to various shops where he may require special work. The tow bar is also useful later should he want to use his car for a competition version which would be towed instead of driven to the local drag strip or other events.

CAR CRAFT photographer Tom Medley happens to be one of those backyard automotive engineers and can usually be found some place in the interior of his '29 A-V8 coupe. Instead of using the old method of converting Ford radius rods, Tom merely bought about 8 feet of 2¼-inch x ⅜-inch strap iron for $2, a trailer hitch for $3 and then attacked with cutting torch and arc welder. Results: Look at the pictures, then copy it to fit your own car. If you have bumpers in the way, the same general idea can be used except that a pair of brackets will have to be devised to grasp the bumper. Refer to Garage Gimmicks, May 1954 CAR CRAFT.



Long piece of ½-inch rod passes the length of the tube between the frame horns and is threaded on both ends. Tow bar can be easily slipped over rod and locked with two nuts.

Tow bars can be made to fit almost any car. Draw pattern out on garage floor, heat and bend metal to shape, then weld together. Hitch can be bought at any auto parts house.

"GRAB BAG"

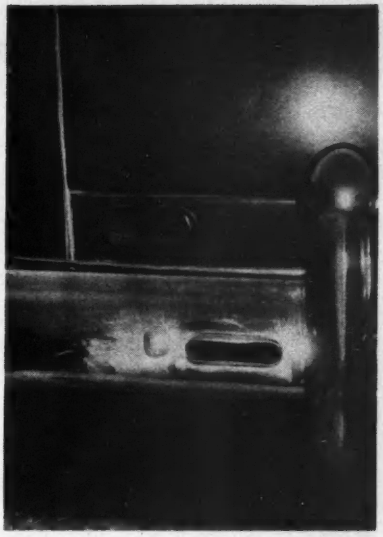
TAILLIGHTS FOR '41-'48 FORD OR CHEVY

IT HAS been quite some time since we have dealt with what all one can do to restyle the good ol' Ford and Chevy '41-'48 vintage—this we plan to remedy right now. Being that the rear body panels of these two makes possess practically the same styling, it's only natural that what will fit one will fit the other. Let's take taillights for instance: It's granted that the extra large luminous lenses that the late models use don't get the job done when installed on these rounded rear decks. On the other hand, though, there are numerous restyling approaches that can be taken which offer just as much class and appeal. Here are fourteen of them . . .

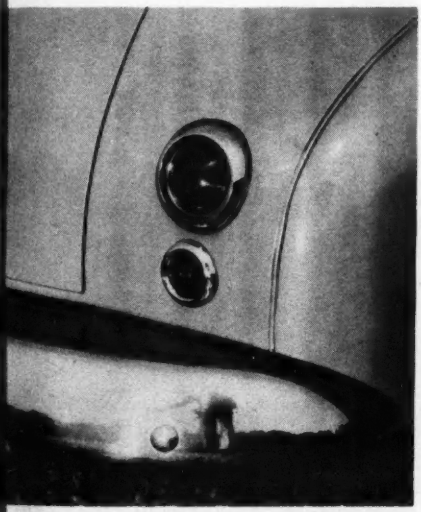
One of the more novel bumper-taillight arrangements is this massive bumper made from two different components. Center section is '46 Buick; tips are '46 Oldsmobile.

Bumper guard taillights are very popular for '41-'48 models. Special taillight lenses are built into notched-out guards. For details, see Torch Tips, February '54 issue.

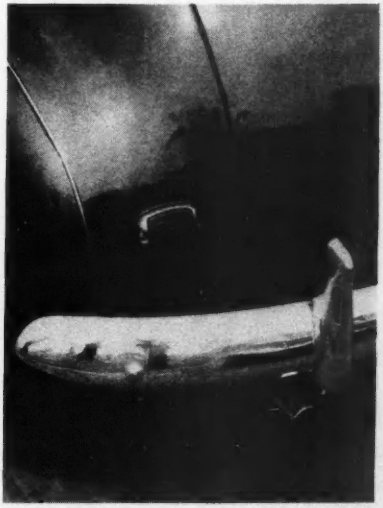
Here, stock Chevy lens has been frenched into the rear panel with all trim removed.



Similar example is this '48 Ford taillight that has been lowered and frenched in.



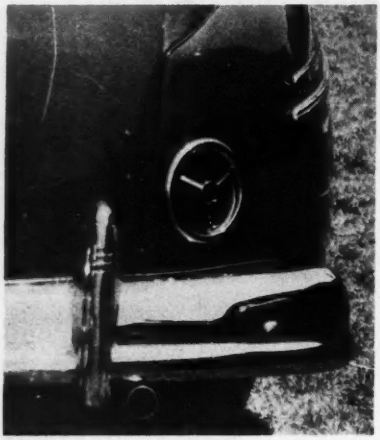
Most popular of all is the '50 Pontiac light. Installation requires little work.



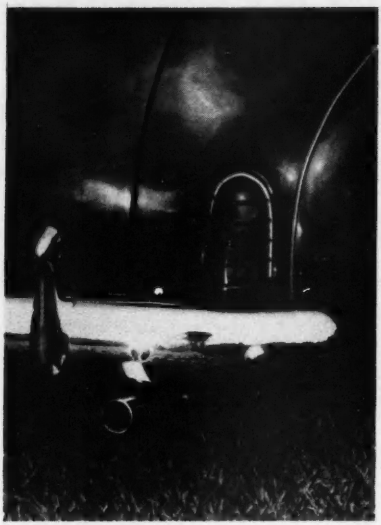
Small universal accessory blinker light has been installed in place of stock light.

"GRAB BAG"

continued

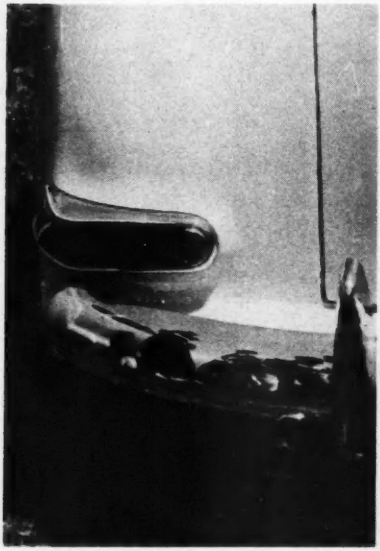


Brother to the '50 Pontiac lens is this '50 Lincoln unit. It's slightly more ornate.



A treatment along the original vein is this '51 Lincoln lens that's frenched into panels.

Some customizers go to extreme. Here, '49 Chevy taillight is positioned sideways.



'49 Merc lenses blend well with the rounded fender contour found on '41-'48 models.

Common approach for Fords is this method of frenching unit into the rear body panel.

Along the same theme is this installation. Tubing was used to fair unit into fender.

Here, Ford light has been faired into the fender crease using long length of tubing.

Stock lens was replaced with this '50 Chevy taillight. The unit is built out from fender.

"What's Your

GMC ENGINE INSTALLATION

Dear Chuck:

I have a 1949 Chevrolet coupe which is a good car but has now reached the breaking point. Since I am going to have to either completely rebuild my engine or put in a new one, I might as well give in to a strong urge and join some of the higher horsepower ranks.

I have two ideas in mind: one is to completely rebuild my Chev engine and the other is to install a GMC '270' engine which I can pick up fairly cheap. I can build up the GMC and still keep my car running so as to chase parts, or I can yank the Chev engine, do a quick overhaul and install some external bolt-on equipment. I lean toward the GMC under these circumstances but do not know just what to expect in installation problems. Also, I am somewhat undecided as to how far I should go with the modifications on the engine. I use the car for transportation through city traffic to school, so it must not be too radical.

Any suggestions that you can give would be greatly appreciated. Thanks,

Art Halstead
Chicago, Ill.

The GMC offers much more horsepower potential than the Chevrolet, but it will also cost a little more to buy parts for it. The GMC has full pressure oil system and general overall construction quality over the Chevy, so if you feel that the extra quality and horsepower warrant the extra cash overlay, take the GMC. A road grind cam and a 3 15/16 bore should be the only major alterations needed in the block assembly itself. An early model head with the small ports can be cleaned up to make a very good street job setup. The smaller ports in this type head will give much better induction than the larger late model ports. A dual manifold set up will give adequate carburetion for street use. Many other engine modifications may be made but it's up to you to decide how much money you want to spend and how radical you wish to make the conversion.

Installation problems involved should not be too great in your case. The radiator will probably have to be moved forward approximately 2". New motor mounts will have to be used and different mount pads will have to be fabricated to the framework in the new location. Either GMC or Chevy clutch may be used but if you are planning to modify the engine greatly, we recommend the GMC. The other engine installation difficulties are mostly minor, although it is not a job to tackle on a Saturday afternoon.

"PROPER JETTING"

Dear Chuck:

I have been reading CAR CRAFT for some time and find it very interesting, especially the articles by you and Ed Monroe. I read your articles on the GMC and the carburetor article by Ed Monroe. They were excellent.

Since you folks seem to know what you're talking about, I wonder if you could help me. I have been running a 292 GMC Wayne head, 4 pot manifold with 4-81 carburetors and it sure has the making of a bomb; but I have been having carburetor troubles. The idle is good but going off the idle it is to lean and spits back, then it seems too loaded up (the pump maybe). The pots come with .035 jets and they were too lean by a long ways, so I tried some .045 and they are far from being right, too! I am using a Howard M-6 and running 10 to 1 compression. Any information you can give me will be appreciated very much, will you enter my subscription for 2 years.

Very truly yours,
S. E. Hudson
Fresno, Calif.

This is an interesting typical example of too

Problem?"

By CHUCK EDDY

much venturi area, too rapidly. This installation is complicated by the camshaft characteristics, which probably don't encourage smooth running in the intermediate range. We suggest linking the two center carbs together, to open first as primaries. During the last ¼ of throttle travel the two end carbs should have their entire opening. Jet sizes should be set for best performance and "plug readings." No mention is made of what fuel is used, the compression suggests alky, in which case the jets are still too small.

GIMMY FOR LATE CHEV

Dear Chuck:

I am interested in putting a modified 302 GMC engine in my '51 Chevy. I would like to know what kind of front shocks and rear end would be best to use. Would a late model Olds or Caddy standard shift transmission fit or will a '55 Chevy transmission with overdrive work better with the '55 Chevy 4.11 rear end? What do you think would be best? Would the steering have to be moved? I had thought of installing a supercharger after I finish installing the engine. What would be the best kind and most reasonable on gas around town? I would like to have it set up where it would come in when the pedal is stamped. The engine will have: 4 1/16 in. stroke, dual pipes, full race cam, Auburn clutch, big valves, polish and ported, 2 hot coils, Stromberg "97's," and (?) supercharger.

Bobby Wilhelm
Houston 11, Texas

We suggest the use of Gabriel AdjustOmatic shocks for your Chevy. By all means read "Big Gears" again and examine the pictures. Packard transmission will also fit as affirmed by sharpie, Pfc. Powers on page 66 of April '55 CCM. The steering will not have to be disturbed, but the pan will, to miss the steering. Bobby, you can read my patter on wind machines (April and May '55 CCM) but don't plan on gluing one on your Jimmy just yet. Get some good experience with the engine as you describe it, without complicating it with supercharging.

ONE OF THE BIRD-WATCHERS

Dear Chuck:

In reading the March '55 issue on Souping the Ford and Merc by you, I would appreciate more detailed information on the "Short-Stroke Bird."

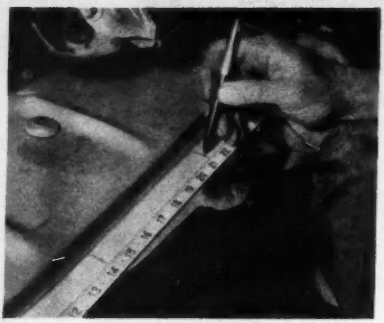
For quarter mile modified stock racing, what cam specifications would you recommend? Using a '54 Merc, will it stand a bore of 3.87? What is the cost of the information and where can it be obtained?

Sincerely,
Shafer's Garage
Vinton Shafer

The Short-Stroke Bird was not proposed in jest, we think it has a definite place in competition. From the expense angle it would only be justified if you already had a '54 crank and rods and would intend to buy block and pistons of the new size. We don't recommend boring the '54 Merc to more than 3.75 inches. If you have a '54 Merc why not build the off-beat Bird of the same 292 cubic inch size? We intended that the basis for the larger 3.87 bore would be a B5A 6010A block ('55 Merc and T-Bird) which might have been scored, necessitating the bore job.

Our cam recommendation for your short track use would still be the 270 degree duration with relatively high lift (around .400 inch). You need a good lower end torque and the rear axle could be picked to hold the engin below 5500 rpm maximum and take advantage of the cam's best range.

HERE'S HOW—Installing Grille Teeth: (*Continued from Page 43*)



1. Tape rear top edge of bumper. At each inner grille pan rib, mark off center line.

2. Center punch each marking, then drill ¼-inch hole in the bumper for mounting teeth.

3. For snug fit, file bottom front edge of teeth to fit top edge of bumper contour.

4. Place chrome teeth into position, then bolt them from underneath side of bumper.

5. With teeth bolted at front, mark off the rear bolt holes onto the inner grille pan.

6. ¼-inch stove bolts are used at rear. Use same procedure for attaching lower teeth.

BENCH RACIN' (*Continued from page 4*)

from the theoretically "ideal" with gasoline. In fact, with some of the later engines, even this amount may be excessive, resulting in detonation under heavy load.

If maximum power is wanted, the mixture must be a bit on the rich side—usually about 8 to 10 per cent for best results with gasoline. However, this will be somewhat sloppy around town, so it's best to jet the carburetor close to the "ideal" and keep the maximum power jets handy for when the need arises. With alcohol or nitrated fuel blends for straightaway trials, the mixture should be about 20 per cent rich for safety's sake. On tracks or other types of racing where there are periods of closed throttle operation, the mixture should be only about 10 per cent rich instead of 20 per cent so the engine won't "load up" when the throttle is opened. If one starts from scratch, the best advice would be to go rich on the mixture, leaning it out as necessary. This can prevent serious damage to the engine by eliminating the high temperatures, detonation and pre-ignition.

Selecting the proper spark plug for the engine is the next step. Here, the hotter the plug without burning or causing pre-ignition, the better, contrary to popular belief. The spark plug electrode gap should be as wide as possible, consistent with good engine operation in all ranges. The wider the gap, the easier the engine will start, the better the idle and low speed performance and fuel mileage. Also, the thread length of the plug should match tapped holes in the head.

Spark advance also plays a vital part in engine tuning. The spark advance curve should match the engine's requirements. This laborious task is best done on a dynamometer with the aid of a distributor testing machine. In no case should the spark be so far advanced as to cause detonation under full load at any speed.

If the above tuning procedure is followed competently and thoroughly, the best performance can be brought out of any engine. Needless to say, there's much more work involved than in a $2.98 "tuneup," but the results are well worth while.

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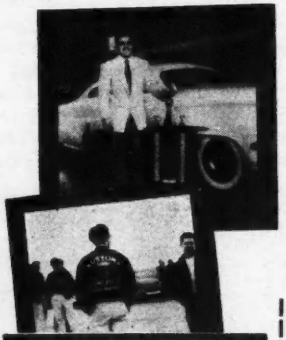

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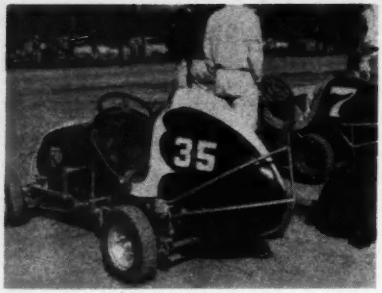
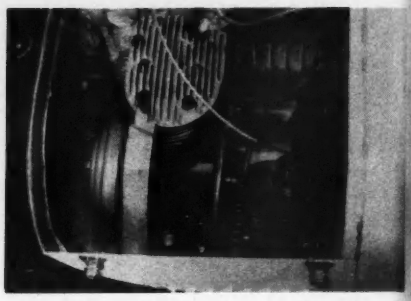


Number 35 is typical three-quarter midget that now competes with the small micros.



John Hysinger's powerplant consists of a real warm 21-cubic inch Mustang engine.

STORM ON SUNDAY

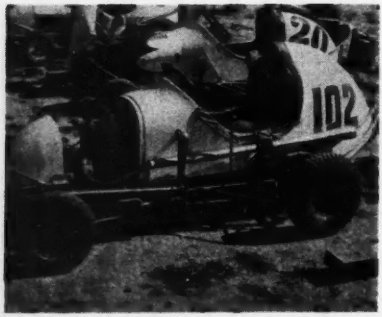
(*Continued from page 13*)

the only requirement in most cases, was to delete half of their cubic inches. To them, this was easy, all they did was remove one of the cylinders along with rod and piston, plate up the engine case opening and rebalance the lower end. Henceforth, the associations took on new membership, races became more competitive and the whole program had one hundred per cent more color.

Along the lines of body specs and wheel tread requirements, we found that rules were fairly uniform in all associations. Wheel tread approximately 40 to 48 inches, wheelbase 60 to 80 inch maximum, tire size from 16 to 18 inch maximum, no maximum or minimum overall weight. Bodies must have fully belly pan, front and rear nerfing bars are required, no limitation on fuel, no gear changing after qualifying runs and all transmissions must be locked. Safety requirements were: safety belts, roll bar and approved crash helmets.

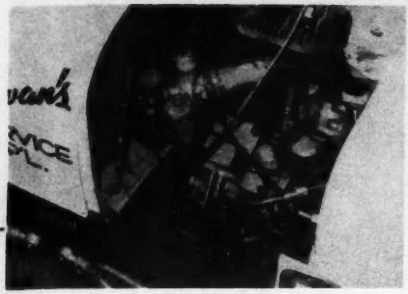
Some of the associations specified that only American engines and parts were to be used. This rule is strictly up to an association's decision. In many cases this rule is abandoned because it put quite a restriction on the engine again. There is quite a few foreign make engines with a lot of capability in the 12 to 15 inch overhead valve department.

The racing program rules are generally adapted right out of any big-time racing event, with starting position handicaps, etc. One thing of general interest we observed during the races was the *no nerfing or unnecessary rough driving* rules. One contestant was benched for the day by the track's



Harry Ringer runs TQ with half bike engine. Excess weight of TQ's is big handicap.

Solid suspension systems give driver and car terrific beating. This damage can result.

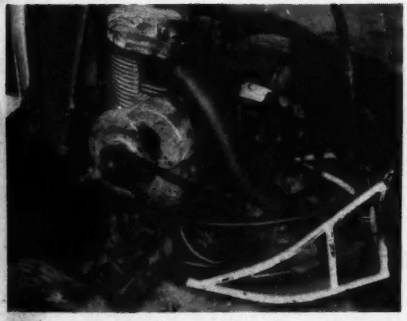


Harry Ringer runs TQ with half bike engine with cylinder removed; Amal carb used.

racing officials and will probably be fined come next club meeting.

Next month we are going to have part two of the micro story and will concentrate on construction. We'll have on hand the simplest construction type car, with lightweight of prime importance, all the way to a miniature Indy micro with full torsion bar suspension.

If you're the type of guy that gets a big charge out of playing hot shoe on a small track with a bunch of eager stab-it-and-steer-it drivers, then micro midgets you'll love. When they loaded the editorial staff of CAR CRAFT into a couple of these little bombs and shoved us off, we got so carried away that they had to practically run us down to stop us from wearing out the little jobs. That's why we agree that micro-midget racing is destined to become America's number-one pastime.



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- FRENCHING '49-'51 FORD TAIL-LIGHTS
- BUILDING A CUSTOM—PART IV
  - Rear Fender Airscoops
  - Bumper Tip Exhaust
  - Shaving the Rear Deck

JULY

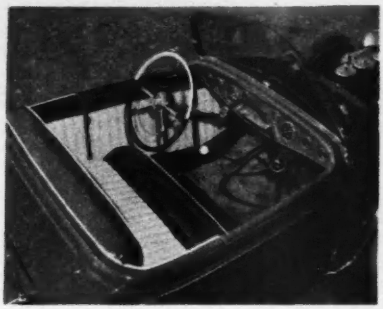
CAR CRAFT

HOLD IT!

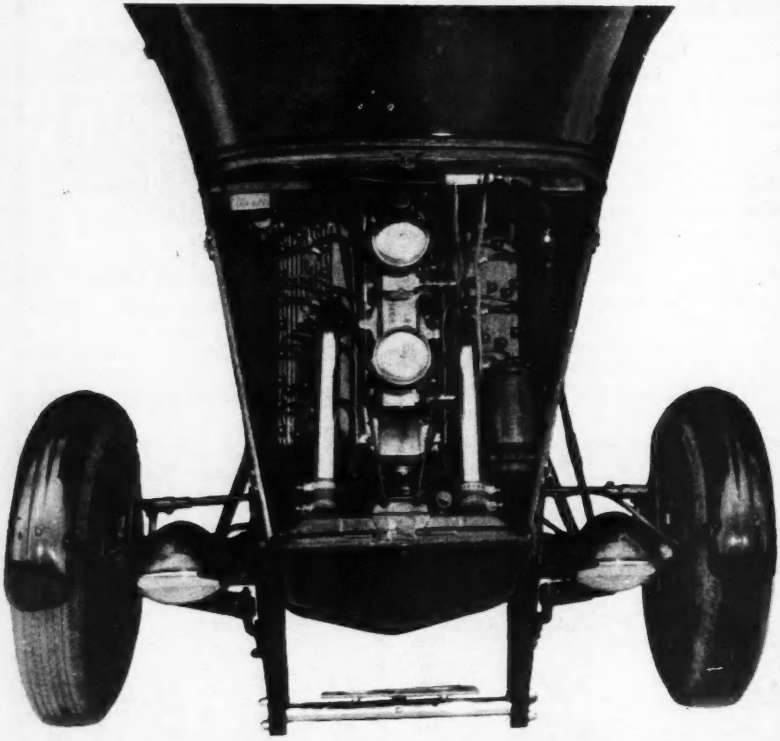
continued *from page 29*

wanted a story on how to take better pictures of hot rods and custom cars and, after all, who should know better than a camera?

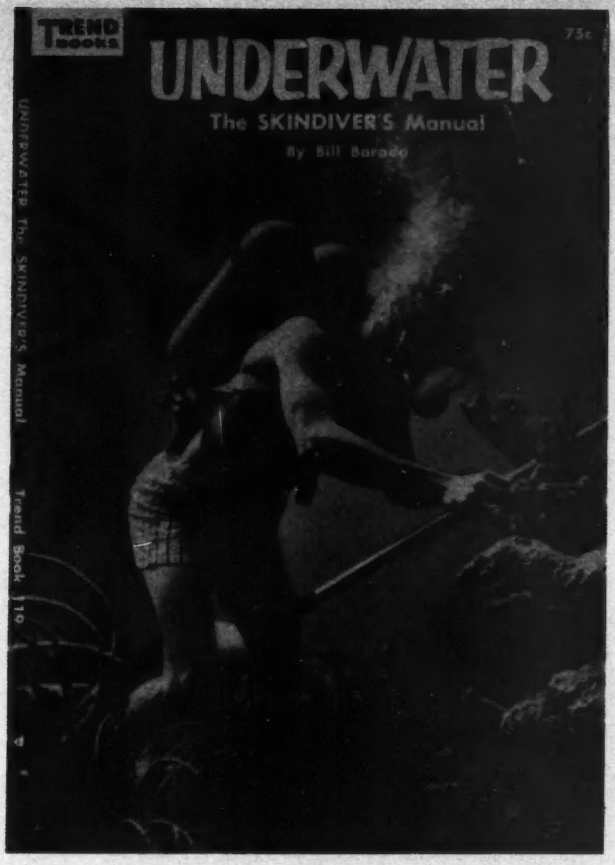
Editor's Note: The car used for the illustrative photographs in this story was furnished through the courtesy of Custom City Auto Sales, 1414 West Manchester Blvd., Los Angeles, California.



When photographing a roadster, the interior shot can be taken from this angle. In doing so, you show the custom upholstery and dash, killing two birds with one stone.



With cars that possess removable hoods, such as roadsters, etc., engine shots can be made from this angle offering an unobstructed view and an unusual shot for layout.



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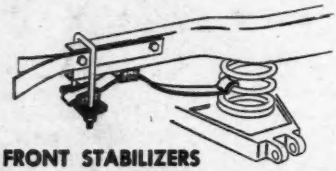

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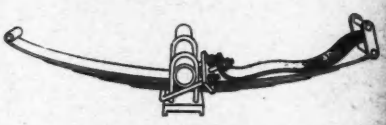

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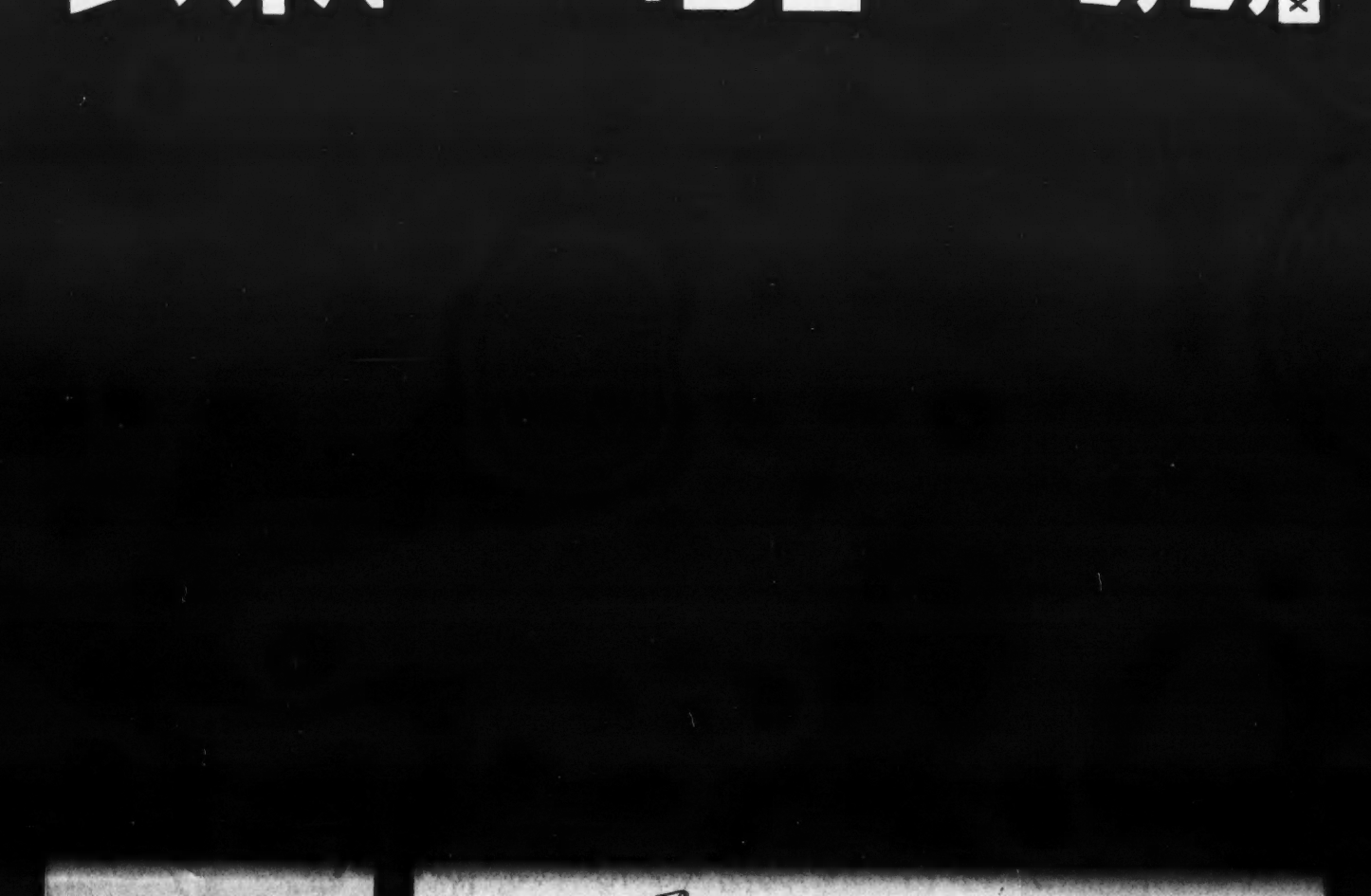
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